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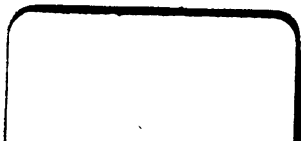
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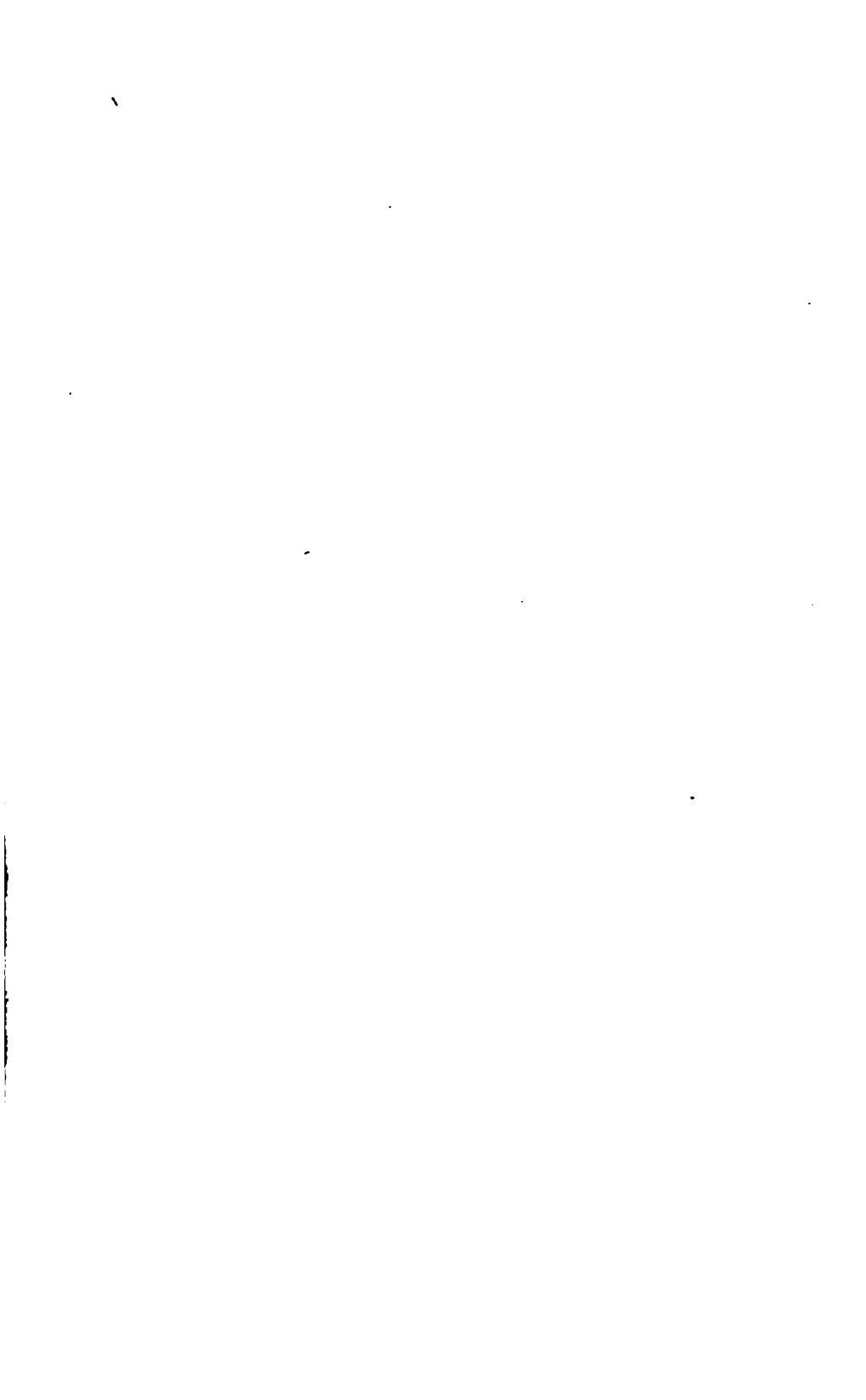


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F. B. PERKINS, *Hartford, Conn.*

F. C. BROWNELL, *New York City.*

I. EDUCATIONAL APHORISMS AND SUGGESTIONS,

ANCIENT AND MODERN.

WE had made some preparation for a series of articles in successive numbers of this Journal, embodying the most remarkable sayings, more or less aphoristic, of wise and good men, in different countries and in different ages, on the subject of Education and Schools, when we found the labor of collecting very much abridged in a volume of Dr. J. F. T. Wohlfarth, of Kirchhasel, in the Principality of Schwarzberg-Rudolstadt—entitled “*The Pedagogical Treasure-Casket: a Theory of Education, set forth in the most remarkable expressions of the wise men of ancient and modern times.*”

The matter is arranged under the following heads:—

- I. Man—his dignity and destiny.
- II. Education—its nature and value.
- III. Parents and Teachers—their duties.
- IV. Early Training—home education.
- V. Obedience to Parents.
- VI. Female Education.
- VII. Intellectual Culture.
- VIII. Subjects and Means of Education.
 1. Language.
 2. Natural Science.
 3. Geography.
 4. History.
 5. Mathematics.
 6. Philosophy.
 7. Books.
 8. Poetry.
 9. Music.
- IX. Religious Instruction.
- X. Discipline.
- XI. Example.

The contents are introduced by the following Preface.

During the preparation of his “*Pedagogy from a Practical Stand-point*,” the idea of a collection of the more remarkable expressions of the wise men of all times, on a subject so steadily increasing in importance as that of education, had occurred to the editor with the more force because such an anthology was not forthcoming for his own use, and because it seemed to him that it would furnish a store of incitements to a holy enterprise not to be found in any other way, would disseminate the most fruitful seeds, and would offer a species of guide,

“*Pedagogisches Schatzkästlein.*” Von Dr. J. F. Th. Wohlfarth. Gotha, 1867. 416 pages.

before unattainable, to all whose vocation and duty it is to labor, directly or indirectly, for the good of the next generation; especially for educated parents, school officers, and public and private teachers.

Acquainted by the nature of his studies with the treasures of ancient and modern pedagogical literature, and in possession of a rich treasure of extracts, the editor seized with pleasure the hand which his publisher, so unwearied in his exertions for popular education, held out to him; and he now lays his collection before the public.

On the difficult point of arrangement, the editor concluded it best to proceed partly by chronology and partly according to subjects: which may account for the location of some extracts earlier or later than at first view might seem appropriate.

The editor would gladly have inserted still other extracts from useful teachers and celebrated wise men. But this would have rendered the extent of the work too great. According to the best judgment of the editor, however, at least all the chief subdivisions of his subject have been discussed. He is confident that under the circumstances his apology will be accepted, if any maxims of eminent men shall not be found when looked for.

The author introduces the following parable from Hawke, as symbolic of the work of the parent and teacher.

A gardener planted, by the garden-wall, a little tree of a remarkably fine kind. As it every year grew stronger, it threw out strong shoots.

But every spring and every summer the gardener cut off many of these.

They were waste wood, he said, that injured the valuable branches, taking the sap away from them and keeping them in the shade.

The children wondered at his doing so, and could not understand it.

But after a few years the little tree bore its first fruit, which tasted excellently to the children.

But the gardener still continued to prune it.

The little tree is a child.

The gardener is his father, his teacher.

Children are endowed by God with good gifts and noble impulses.

But these easily degenerate, and destroy what is good, both in body and soul.

Therefore must parents and teachers continually direct the child, teach him, blame him, even discipline him.

Thus will grow up at last a lovely youth, and a useful man, or a good daughter.

We publish in this number the first three chapters of Wohlfarth's work very nearly as they stand. In succeeding numbers of this Journal, we shall give the remainder of the book, substantially as it was compiled; and shall also add, under the existing heads, such other selections as we have gathered, and others under additional chapters; with the intention of ultimately completing such a comprehensive and valuable collection of detached thoughts, aphorisms, and suggestions, that every practical teacher and friend of education shall be enabled to find in it something to stimulate reflection, to suggest expedients, or to solve doubts.

I. MAN—HIS DIGNITY AND DESTINY,

AS THE SUBJECT OF EDUCATION.

AND God said, let us make man in our image, after our likeness; and let them have dominion over the fish of the sea, and over the fowl of the air and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

So God created man in his *own* image, in the image of God created he him; male and female created he them. BIBLE, *Gen. i*; 26, 27.

And the Lord God took the man, and put him into the Garden of Eden to dress it and to keep it.

And the Lord God commanded the man, saying, of every tree of the Garden thou mayest freely eat.

But of the tree of knowledge of good and evil, thou shalt not eat of it; for in the day that thou eatest thereof thou shalt surely die.

BIBLE, *Gen. ii*; 15-17.

When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained;

What is man that thou art mindful of him? and the son of man, that thou visitest him.

For thou hast made him a little lower than the angels, and hast crowned him with glory and honor.

Thou madest him to have dominion of the works of thy hands; thou hast put all *things* under him.

O Lord our God, how excellent is thy name in all the earth!

BIBLE, *Psalms*, viii; 3-6, 9.

And they knew not the secrets of God, nor hoped for the wages of justice nor esteemed the honor of holy souls.

For God created man incorruptible, and to the image of his own likeness he made him. BIBLE, *Wisdom of Solomon*, ii; 22, 23.

Lay not up for yourselves treasures upon earth, where moth and rust doth corrupt, and where thieves break through and steal.

For where your treasure is there will your heart be also.

Behold the fowls of the air; for they sow not, neither do they reap, nor gather into barns; yet your heavenly father feedeth them. Are ye not much better than they?

And why take ye thought for raiment? consider the lilies of the field, how they grow; they toil not, neither do they spin;

Therefore if God so clothe the grass of the field, which to day is, and to-morrow is cast into the oven, *shall he* not much more clothe you, O ye of little faith?

BIBLE, *Matt. vi*; 19, 21, 26, 28, 30.

For in the resurrection they neither marry nor are given in marriage, but are the angels of God in heaven.

I am the God of Abraham, and the God of Isaac, and the God of Jacob? God is not the God of the dead, but of the living.

BIBLE, *Matt. xxii*; 30, 32.

For ye have not received the spirit of bondage again to fear ; but ye have received the spirit of adoption ; whereby we cry, Abba, Father.

The spirit itself beareth witness with our spirit, that we are the children of God :

BIBLE, *Paul's Ep. Rom.* viii ; 15-16.

Marvel not at this : for the hour is coming, in which all that are in the graves shall hear his voice,

And shall come forth ; they that have done good, unto the resurrection of life ; and they that have done evil, unto the resurrection of damnation.

BIBLE, *John*, v ; 28, 29.

The destiny of man is, to perfect himself.

The wise man, whose virtue is actively efficient, endeavors everywhere, always and in all circumstances, not to undertake anything which violates the laws of his reason.

Riches and honor are two things which mortals desire ; but if the reason does not approve of the possession of them, the truly wise man will not seek to attain them.

Men hate and flee from poverty and abasement.

But the truly wise man, although unjustly thrown into such circumstances, will never try to escape from them by unjust means. CONFUCIUS.

According to our relationship to the gods, is virtue—moral excellence—the proper aim of our life.

Above all, our happiness should depend upon our immortal part ; which the will of the gods, our creators, has made the noblest. ZOROASTER.

How brief is this life ; and how unhappy is he who does not apply himself to the practice of virtue ! virtue, which produces the only true good which we can enjoy with real profit.

That death is certain, no one doubts.

We are only ignorant of the moment at which we shall die.

But if it is true that it is to come upon us, whether we are good or bad, then turn your attention to it, and determine on which of those two sides you will be ranked.

THE HINDOO BOOK, *Cour-Vedam*.

He who always draws in his senses, as the tortoise does his limbs, from contact with sensual allurements, his soul is firmly fixed in wisdom.

BHAGAVAD-GITA.

Men should pray, not to the visible material sun, but to the divine ; to that incomparably higher light which illuminates all, rejoices all, from which all proceeds, to which all must return.

Laus of Menu.

The wise man seeks to acquire knowledge and wealth, as if he were not subject to death or sickness ; and fulfills his religious duties, as if he were upon the verge of death.

Knowledge produces humility, humility worth, worth wealth. But from religion comes happiness.

Knowledge is the most valuable treasure, for it can not be stolen nor consumed.

As the figures on an earthen vessel can not be easily effaced, so is wisdom impressed upon the young.

AUTHOR OF *Hitopadesa*.

The end of all instruction is virtue ; and after this must the scholar strive, even as he who draws a bow, must fear nothing so much as to miss.

The teacher must set before the young a high object, by the examples of the wise men of old ; he must proceed as does the sculptor in forming the rough stone.

Instructions and admonitions must be as the spring rain to the needs of the husbandman.

TECHNICI.

Strive to make your exterior brilliant and your interior pure; let every look and gesture, every word, be a precious stone; that you may become lord of the earth, of your wife, of your substance, of health and splendor.

Whether you wake or sleep, consider always what is a proper regard for yourself; whatever you do or omit, never forget that you are setting an example.

Never must you cherish the smallest fault; a rule that will save you much damage; nor can you cultivate the smallest virtue without receiving a double reward.

He who plants no corn will gather no ears; and he who does not gather his crop, on what will he live?

Book of Chinese Poems, collected by CONFUCIUS. After RUECKERT.

A just man obeys strictly the voice of his inner self, that in all his actions he may conform his will to it.

He who is deaf to this heavenly voice, will give free course to his passions, and will call every vice to arms.

Oh, how is it possible for one to become a good and wise man, who despises this ray which shines to each man from heaven? How can such a man escape from evil and arrive at perfect goodness?

No: He will do what is inconsistent with the dignity of man, and will thus fall into the very evils which he would avoid.

CONFUCIUS.

For a guide, choose Reason.

Then, when you leave the body, you become immortal, like one of the eternal gods; no longer subject to death.

Accustom yourself, therefore, to do all things according to Reason.

PYTHAGORAS.

Let man strive to be worthy of Heaven; let him, in this world, do good out of a pure heart; let him be pure in thought, word and deed; let him seek only what is good, and be holy and speak the truth.

ZOROASTER.

Reason is the noblest and best thing; and this the gods have freely given to us.

EPICTETUS.

Man consists of an elementary nature, and a rational or divine principle; a part of the universal soul, an influx of the central fire, and an irrational part, namely, the passions.

At death, therefore, it is only the first of these that perishes. The reasoning part, in virtue of which man is man—the spirit itself, is immortal.

When death loosens his chains, he goes, with an ætherial body, to the abodes of the dead, until the time when he returns again to the earth, in order to dwell there again in another body, human or animal, until at last, after having become fully purified, he is raised up to God, the eternal source of all good.

Harmony in all things is the end after which man should strive. As in the universe, it should exist in man, as if in a miniature world.

Therefore man should endeavor to understand himself; that he may attain to perception of abstract relations, of harmony, of heavenly beauty, and thus may enter into fit intercourse with the divine, and find therein his highest good.

PYTHAGORAS.

It is by virtue that man makes himself like God, so far as it is possible for him.

Virtue consists in justice, in moderating the desires, and in holiness.

Religion secures to the just man two inestimable advantages; unbroken peace during life, and blissful hope in the hour of death.

It would be frightful to believe that the Gods were mindful of our gifts and sacrifices, but heeded not whether the soul is holy and just.

PLATO.

When in the morning you wake from refreshing sleep, reflect at once and seriously, what you must do during the day. Before sleep closes your eyes, think three times over all that you have done during the day; and ask yourself, whither you are going, what you are doing, and what you yet lack of the divine; what you have overlooked, what done, and what neglected.

PYTHAGORAS.

What is the noblest thing in human life?

Not to fill the sea with fleets, to hoist your flag on every coast, or if there is no more land, to search the ocean and discover unknown countries; but it is to attain to intellectual insight; and to win the greatest victory—that over vice.

Those are innumerable who have conquered cities and nations; but those who have conquered themselves are but few.

What is noblest?

To elevate the mind above the threats and promises of fate; to endure ill fortune with cheerful courage; to receive whatever comes as if it had been so willed. For weeping, complaining, sighing, are to resign our faith.

What is noblest?

To let no low thoughts come into the mind; to lift up towards heaven pure hands and an upright heart; and if an accident shall put you in possession of what others value highly, to preserve the same demeanor when it comes and when it goes.

What is noblest?

To be every moment prepared to die. This makes free; not according to the provisions of the Roman law, but according to the law of nature. He is free who is not a slave to himself. Such slavery is eternal. To be one's own slave is the severest servitude. And yet it is easy to free one's self from it.

Oh, it is delightful to wander beneath the stars, to laugh at the magnificent halls of the rich, and at all the treasures which the earth has already yielded to them, and which she still conceals in her bosom for the satisfaction of their avarice.

And the wise man says, This is the speck for which so many nations ravage each other with fire and sword!

If the ants were endowed with human reason, would they not divide their little realm into many provinces?

There is something lofty and noble in the human soul, that gift of the gods—yes, something divine.

When the day arrives which shall separate the union of human and divine things, I will leave my body behind, where I found it, and give myself back to the Divine.

There is but one heavy earthly burden which withholds me from my flight beyond the stars.

But our abode during this mortal period is only a type of a longer and better life.

As we are preserved for months in the mother's womb, and prepared for the place for which we are designed, so in like manner, during the whole period from youth to age, are we in preparation for another birth.

The hour of death is the last hour, only of the body.

All which you here see around you, consider only as the baggage at an inn.

The transition must be ventured; nature compels you; both at your

entrance into the world and at your departure out of it. The Divine also, is around us. It is with us. It is in us. SENECA.

Man is distinguished from other creatures, chiefly by this; that the desires and actions of the latter depend only on transient impressions upon the senses; while man, endowed with reason, seeks the causes and consequences of things, and lays down a fixed plan to live by.

Moreover, man alone possesses the capacity of speech as a means of communicating his thoughts.

Moreover, man alone possesses the desire for knowledge, or the impulse to know truth, together with the means of satisfying this impulse.

Finally—the last great distinction of nature, the last great effort of reason—man alone is sensible of order, decency, propriety.

In man there exists a power which draws him toward what is morally good, and away from what is bad; a power as lofty as the divine power which maintains earth and sky, derived from the divine reason itself.

Sleep is the image of death—sleep, in which you wrap yourself daily.

A man dies with the utmost calmness then only, when the life which is departing encourages itself with good actions done.

No one has lived too short a life, who has attained and practiced perfect virtue.

We can then look upon death as a dismission from prison and a release from chains, in order either to enter into an eternal abode prepared for us, or to be without any perception of or care for the future.

But, as we are not created by blind chance or accident, so it is certain that a higher being cares for us at death; a higher being who can not have created and maintained us here, in order after we have endured all manner of trouble, then to plunge us into the never-ending evil of death.

No; we must rather be convinced that there is some haven, some place of refuge, prepared for us.

Honor, justice, goodness—such is the path to heaven, and to the society of the noble who have already lived.

Elevate thyself, therefore, and act as not being thyself mortal, but thy body only.

For it is not this bodily form which is thyself, but it is the soul of each one, which is his own divine self; and no shape which can be pointed out with the finger.

Believe in the Divine within thee.

There is nothing more valuable than the mysteries of Elousia, which purify this life from barbarism, and train it to humanity.

We truly comprehend the principles of living, when we understand not only how to live with cheerfulness, but how to die with better hopes.

CICERO.

Man consists of two parts; the body, formed of primitive matter, and the soul, sprung from the primeval force of the universal soul; that is, from God.

The body is the organ and mirror of the mind; and for that reason requires the most diligent care both for its support and development.

By reason primarily, man is distinguished from all other living creatures, raises himself high above them, and becomes a man, in the higher sense of the word.

The soul is an efflux of the universal soul; by means of it, man stands in the closest relation to God, is related to him, is his image.

It is through reason that we become wise.

The fundamental principle of human action can be no other than "Live in accordance with nature:" do what is consistent with your mental nature, your reason; live according to your reason, within which your

destiny is revealed—to your dignity as human beings—to virtue. Follow, in this manner, the principles of God; make the law which the highest reason follows, the rule of your action; let your will be in harmony with the will of the ruler of the world.

ANTONINUS PIUS.

Learn to know yourselves and the laws and designs of nature! Who are we mortals? To what duties and condition, and on what plan are we born? How and where can we most certainly recognize and attain the purpose of life? When is the glitter of silver evil? What desires are noble and profitable? For what purpose has God chosen me, and what part has he entrusted to me?—These things seek after.

PERSIUS.

Man lives in accordance with his nature, when he lives a virtuous life; not when he lives an animal life.

Man alone, of all living beings on earth, is the image of God.

By virtue must he make himself like him.

MUSONIVS.

I am a man; nothing human is alien to me.

TERENTIUS.

Man is noble, if he is truly man.

ÆSCHYLUS.

Remember, that thou art a man.

SIMONIDES.

Thou art a man. Know this, and reflect upon it.

PHILEMON.

Man is distinguished from the other created beings of the earth, and principally by this: that the desires and efforts of the latter depend upon impressions upon their senses at the time, and are limited to the present time and place, with little memory of the past or care for the future. Man, on the contrary, is endowed with reason, which makes him capable of understanding the causes and consequences of things, of taking notice both of their connection and origin, of comparing similar subjects, and thus of joining together the future and the present, of laying down a plan of life, and thus of preparing in advance whatever is necessary to enable him to complete such plan.

Another peculiarity of human nature is, that the same reason enables men to communicate their thoughts to each other by means of speech, and to co-operate in case of mutual need; that they feel a still stronger and more enduring affection towards their offspring, than beasts, and that they are created not only to desire the existence and maintenance of all social organizations among men, but also themselves to take part in it.

A third distinction of the human race is, Desire of knowledge; the impulse to know the truth, and the capacity to investigate it.

Connected with this desire for truth and knowledge is that for honor; the desire for pre-eminence and power; in accordance with which, every man whose natural character is not completely ruined, listens to no one so willingly as to him who teaches something before unknown, and furnishes rules for some department of effort never before investigated; or to him who, for his own good, commands him in accordance with justice and law.

This latter tendency, again, is related to greatness of soul; and strengthens it to raise itself above the changeableness of the accidents of human life.

The last great trait of human nature, and the last great effort of reason is, that man alone, of all created beings, has a sense of order; an idea of propriety and decency, or of any fixed rule for utterance or action.

No other creature regards beauty, grace, or harmony of parts, even in visible objects.

Our destiny is serious; our occupations are great and important.

In truth, when we reflect what is man; what powers lie within his nature; to what excellence he can attain, we shall feel that nothing can

be more unworthy than to waste his strength in effeminacy, his days in tickling his palate or in the gratification of still more ignoble desires.

We must, on the contrary, consider that the true life, which is conducted on strict principles, where the body is contented with little care, the passions are kept in subjection, and where freedom and modesty are preserved.

CICERO.

Thy mighty being, O God, appeared when all things slept in night, and when the earth, which thy love called into being, commenced its existence. Millions of beings greeted thee, O God; and thy paternal eye, and thy heart, all-embracing, rejoiced at the pleasures of creation.

But of these millions of beings, none looked up to thee, nor could read the stars. The earthly life alone occupied their thoughts. Though sun and moon, and thousands of worlds, swung round in golden splendor, none saw their brightness, nor him who made them.

Once more, O God, thy power uttered a summons, in a loftier tone; and then did nature's beloved son issue from the womb of earth. And the rich chain of existence now possessed its most beautiful link; and creation an ornament consecrated by God.

Look upwards! Delightful knowledge, that we are not dust. The father says so, and his child looks up to heaven; recognizes the hidden Master in his great masterpiece; feels God summon him to heaven. And thus God becomes the object of his desires.

O holiest of pleasures! Man, recognize thy vocation! Thou art more than all the suns; thy vision reaches beyond suns. I can recognize my Creator; can look upon the vault of the heavens; and my soul can discover Him within the substance of this world.

Virtue, after which we strive, is noble, not because to be free from evil is a good in itself, but because it loosens the fetters of the mind, prepares it for a knowledge of heavenly things, and renders it fit to enter into intercourse with God.

The mind attains to the perfect and complete state of happiness of which the human race is capable, when it treads every evil beneath its feet, and elevates itself, and penetrates into the inner depths of nature.

The mind is the noblest part of us.

God is nothing but mind.

He is all reason; while mortals are so completely in the power of error, that men take to be the result of chance, of mere accident what is most beautiful, legitimate and carefully devised.

To become nearly acquainted with God is, to pass without the mortal nature, and to become partaker of a splendid destiny.

SENECA.

What a morning; when a new sun shall enrapture the free awakened spirit; when, in the joy of heaven it shall gaze for the last time upon its rejected shell! What a morning; when, beside itself with pleasure, the soul shall become part of the new and golden creation; when a choir of heavenly forms shall surround their newly glorified brother! When the vast universe opens before him, he hears the sweet and holy sounds of heaven, millions of paradises blossom before him, and a thousand suns rise and set! Yes, there is a rest to come. Beyond the grave lieth eternity. Blessed, blessed are those who die in the Lord! Our faith is immortality!

Man was not created that he might live forever in the lowest place in the universe, but that he might at last possess heaven, which in this life he regards with wonder; and that he might practice himself in considering and caring for heavenly things.

Aristotle says, "Man is made for a condition of happiness; that is, to practice and inform himself in virtue."

But in the infirmity and weakness of nature, who can attain to this end?

But man, as the scripture saith, is made to be like God, and to live with him forever.

Here on earth he must praise and worship God, must thank him, and obey his word in patience.

But in the future life we can entirely attain to that end.

Man is destined to a higher and better life than this temporal and bodily one, even though his nature had remained unperverted and perfect.

If you would rightly define man, call him a being endowed with reason.

Man is a peculiar being, created in order that he may become a participant in the divine nature and in immortality.

One man is a better creation than heaven and earth.

LUTHER.

Although man is a being who stands upon the confines of time and unity, between the primeval conception and its expression, between the worlds of the understanding and of the senses, a partaker of both natures, a being intermediate between two extremes, placed at the horizon of nature, yet notwithstanding these two natures, his proper aim, his real destiny, is a spiritual one.

For the human soul is independent, divine, lord of nature yet free of it, living from itself, complete, of infinite powers, a medium of eternal truth, all-efficient, all-surpassing.

What therefore is the aim and destiny of this being?

To attain to the highest existence, for the reason; the highest degree of insight, for the feelings; and to the highest good, for the will.

This is shown by the insatiableness with which, whenever we anticipate a new truth or advantage, thither we direct our investigations and desires.

The desire of perfection is born in man.

He can not endure Sometimes, Somewhere, Particular, Partly, Single; he desires Always, Everywhere, Universal, Wholly, All.

His mind is unlimited.

Wherever he is, he finds himself in a center, and his power of imagination unlimited.

Nor is this endeavor of the mind after perfection, empty or unsubstantial.

Universal nature expands herself before him in all her splendor, and promises him satisfaction.

But is it not to be feared that these researches into the immeasurable will make us indifferent to our earthly lives?

By no means.

For, however lofty the end after which our higher nature strives, yet our investigations are limited, while in this life, by our material constituents, to what we now are.

GIORDANO BRUNO.

Of plants and animals, nature both fixes the destiny, and also accomplishes it.

But of man she determines it only; and leaves to himself the fulfillment of it. It is this alone which makes him man.

SCHILLER.

Thou, O God, dost form into thine own image the son of the dust; thou hast filled him with thy spirit; he looks toward thy throne.

Thou thyself hast consecrated him ruler of the globe. He lives in communion with spirits; his lot is eternity.

Even here below, shall he walk in the holy starry road of truth; even here shall he be near the angels, in the brightness of virtue.

Endow me, O God, with courage to follow their steep path. I strive after the highest good; I implore thy-counsel.

Upon earth is my place of labor; yet thou dost summon me hence. Virtue is the reward of virtue—I trust always in thee.

Humanity should, and must, and can have but one destiny.

Let this inspiring prospect not trouble you. Indeed, this destiny of mental and moral perfection will never be perfectly attained.

Yet it is not merely a sweet dream—not merely a delusive hope for the necessary progress of men. They ought, they must ever approach nearer to this end. *AUTHOR of Contributions to the Correction of a few Ideas on Education.*

Believe in a better world.

This alone will satisfy the reason; which finds no peace in the dry knowledge of a systematized activity of the senses; no truth in the teachings of metaphysical artists in thought; no rest in gloomy denials.

There must be something better than what there is now.

This fundamental idea includes all the necessities of our knowing, feeling and determining existence.

It is the last support of the weary.

It maintains the courageous, amid the confusion of the world.

It casts, along the nightlike path of fate, a light now weaker and now stronger, but never wholly extinguished.

BOUTERWEEK.

Through storm and tempest, through pains and labor, anguish and misery, through the terrors of death and of the grave, the spirit of the world leads the race of man, from one step to another, of education, of development, of proving, purification and ennoblement, into the temple of immortality.

F. L. SCHLENKERT.

The highest golden age of men will come, when the sciences are carried to the highest state of perfection admitted by the human organs; when man shall have clearly defined the limits within which his knowledge of the universe is confined; when he shall comprehend the irreconcilable difference between his desires, and what he can attain on earth; and, instructed by the strange results of this difference, shall turn about and establish a healthy and proper equality between those desires, and the objects within the actual sphere of his activity; when, lastly, enriched with all the knowledge of which his nature is here below capable, he shall unite with those acquirements and adorn with them the happy simplicity of his primeval condition.

HEMSTERHUIS.

There is but one mode of building which will continue; the simplest, the greatest. It outlasts all the centuries of the nations. Physically, as well as morally, and politically, humanity is in a process of eternal progress and endeavor.

Perfectibility is no dream; it is the means and purpose for the development of all that the character of our race—humanity needs or affords.

Lift up your eyes and see!

Everywhere, the seed is sown. Here it is corrupted, and germinates; there it grows, and ripens to an eternal fruit.

Here, it lies beneath snow and ice. Courage! The ice melts, the snow disappears, and uncovers the seed.

No evil which humanity encounters can or will be other than useful to it. Such is my confession of faith. Let us hope and labor! HERDER.

He, before whose mental vision shines in peace the lofty beauty of virtue—who, far from pride and self-seeking, likens himself to her inward goodness—who practices goodness without ulterior design—he, saith Jesus, shall see the Lord.

Such a one aspires after the highest good; after wisdom and righteous-

ness. For, said Jesus, if you possess this, all else is already yours; you possess peace, rest of soul; all things will be given you.

Yet hope not, O Christian, that virtue will always secure you happiness on earth. How many have since youth been conscious that its light and strength were nearer them; have shone, pure as angels, with inward beauty, but yet have sighed beneath earthly sorrow.

It is virtue only; only goodness of soul, inward excellence, which is entirely within our reach. It is not chance nor good fortune, opportunity, nor time, but the wisdom of God, which has thus ordained and put so much within the power of all!

Therefore propose not for the highest object any preference which virtue is to ensure. No. Act justly and do good, though even your good design fails. And if you ask, What profit is it to me?—That you do it, must be your reward.

For know, that what God commands, reason requires. Your loftiest aim is ennoblement. For that only are you living here. To this only look; and reject all lower aims.

And if you follow faithfully the inner voice, hope for a corresponding reward. God, the witness and judge of your life, is also the future requiter of it. Immortal life, and blessedness, are its sure rewards.

Heaven is not virtue only, but pleasure also and blessedness. Here, they are often not united; yet this condition aids toward perfection. The noble souls who do good actions here, will there be raised to pure happiness.

But O man, fall not into the error of expecting heaven, as your hire. Let your motives be reason; preference for the better; it is your duty to be good and noble. What art thou? Only a sinful servant. For before God, who is justified?

Yet, what God has clearly promised through the mouth of Jesus, that, reason also bids us hope; and we may pursue our path with joy. A heart pure from sins and vices can not be forever miserable.

Often must I—for God, and duty, require it, offer up my life. And if in this there is no compensation, then, my soul, thou dost contradict thyself within me; then would reason, under the impulsion of virtue, become its own destruction.

Yet, if you have finished the fight here, your reward follows in a future life. If you die in the cause of virtue, you win, although seeming to lose. Thus did Jesus Christ, the model of every virtue, die in his duty.

Let me never mistake Thy summons, O God, who hast given me reason, and Scripture. Let Jesus continue to call me his disciple, true to my Master, even to the grave. May my highest purpose be right and duty; and let not the reward of thy grace fail me.

MARIE LOUISE WILHELMINE, *Princess of Newwied.* (Poem.)

Through the world and its armies sounds the lofty call. Exultingly the angel choirs sing, "One is he who made us!" Yea, the mind in its activity, the earth in her splendor, were created by one wisdom only; are maintained by only one power.

The great work of our God pervades all the spheres of space. All is unconcealed before him; and all is the object of his love. His laws never change; the same great plan teaches the worm to abide upon his leaf, and lays out the path of the comet.

Upon earth he hath laid out a lovely garden for man. To await in faith his paradise, did He summon him into the world; to diffuse light and blessing along the path of his life here; to recognize the greatness of God; and to raise himself toward the angels.

Within the nature of man, the image of his Creator is faithfully shown.

God's love, God's goodness, beam mildly from man's brow. Hail to man! May he never lose this heavenly brightness! And thus may he at last, in the higher spheres, attain the destiny of his life!

As we recognize ourselves to be double beings, souls acting within earthly bodies, so is our destiny a two-fold one; our life on earth is a mission, for time and for eternity. For this present world; within which, in proportion to our knowledge, our powers, and our opportunities for noble efforts, each of us contributes to the collective well-being of our race in the field appointed him by God. For the world beyond the grave; whose coast the longing soul pictures to itself as does the mariner a neighboring shore; for which we must, in the faithful performance of our duty, prepare ourselves, by continual endeavors after the improvement of our souls and hearts.

In this point of view, man is like an amphibious animal of higher grade. As these live either in water or on land, so does he live for time and for eternity. Man constitutes the connecting link between the unreasoning beings of this earth, and the realm of spirits; whither, as their instinct carries birds to warmer regions, he is impelled by holy longings, aspirations and hopes, which can as little deceive him, as the instinct which carries the birds with certainty, over mountains and seas, to the countries they seek.

As the magnet points surely to the north pole, so do the needs of the spirit as certainly lead towards our everlasting home.

Only thus will man act in accordance with his double destiny, live in a manner corresponding to his dignity, and possess the highest happiness of which he is capable on earth, his security for the attainment of his highest grade of perfection. (*Poem.*)

Who can think, under the burning rays of the noonday sun, the same thoughts and in the same manner as at midnight?

Thus, then, we find ourselves as it were in another world, without observing the change, when, if there were no sunset and no twilight, we should experience a painful shock, as we do to a perceptible extent, when the sun or moon is eclipsed.

Thus, my feelings tell me, the darkness and the heavenly host were created, to turn aside our gaze from earthly things, to loose the burden of our temporal periods and labors, to give us, by their innumerable sparks of light, another and a lofty sense of the infinite, of eternity; since by the very fact that we know not what and where they are, they speak to us of so many mysterious and supernatural things.

Thus saith God from heaven, every day, and every night.

The day saith it to the night, and the night answereth the day.

They say it to all the nations of the earth.

HERDER.

Throughout all the animal creation we see that each being has a certain number of ways pointed out to it, upon which it may go; and that all others are prohibited to it.

Nor is it enough that it can not actually pursue these; it has not the power to desire to do so. Its desires, as well as its means, are fettered.

On the contrary, no single direction is exclusively prescribed to the activity of man. Of anything which is not directly possible to him, he can remove the inward difficulties by practice, and the outward by all manner of auxiliary means; and he can at least desire and endeavor after what is wholly impossible.

This characteristic clearly displays his character; and his distinctive physiognomic trait is, a tendency to development, such that even the idea of constraint is unendurable to him, and which is intelligible only by means of freedom.

This, it is true, does not reveal itself in any single trait, but in the

whole extent of physical development, and in the free co-existence of all the parts. And accordingly, it can not be described in words, but can only be seen and felt.

When, however, man, by means of this his peculiar freedom, seems to have passed beyond the limits of the finite, still he does not thus go beyond the bounds of nature; but these are only set at a greater distance.

Although matter, by its immobility and inertia, limits the free activity of the mind, yet its peaceful quiescence moderates the lawless force of the will; and while, by its strict observance of laws, it forcibly constrains the mind, it at the same time limits its tendency to excess, which is continually leading it to neglect form.

As therefore man, as a compound being, unites freedom with natural necessities, so it is only by the most complete equalization between these two that he attains the ideal of humanity. WILHELM VON HUMBOLDT.

Under eternal, reverend and great laws must we all fulfill the circle of our existence.

Man only can accomplish the impossible; he distinguishes, chooses, judges. He can give permanent existence to a moment.

He only may reward the good, and punish the bad; may save, and may rescue; may unite in usefulness whatever is erroneous or wrong.

Let noble man be helpful and good. Let him unweariedly work out what is useful and right; and furnish us a pattern of the being we long for. GOETHE. (*Poem.*)

Every individual man, we may say, contains within himself, according to his endowments, a purely ideal man, to correspond precisely with the unvarying unity of whom, through all changes, is the great problem of existence. SCHILLER.

Man is bound to be man in the truest and most proper sense.

His actions should be derived from the inward harmonious development of all his endowments. An immediate consequence of this would be the harmony of the natural and intellectual world without him, so far as the sphere of his activity extends, and so far as the external world can be modified by his existence and his free activity.

The development and perfection of the intellectual and spiritual faculties in man, therefore, is not the sole object: his bodily powers and faculties should also be brought to as high a degree of perfection as possible. What is required is, the co-operation of his whole mind and whole body together—mental and bodily harmony—the reason, at the same time, affording the immediate ideal for human efforts, and for what relates to itself.

Again: in the cultivation of the intellectual principle, we should not be satisfied with the cultivation or development of some one or other capacity, any more than we should in the cultivation of the body. In either case, a one-sided culture is to be rejected and prohibited, especially where one talent grows at the expense of others.

Man will become perfect, in proportion as he is developed in the greater number of directions.

AUTHOR OF *Essay on the Fundamental Impulses of the Reason.*

How may I know to what destiny, beyond the hour of death, God calls me?

My vision does not reach to the answer of this question.

But the voices of nature, reason, and revelation, answer me with wondrous unanimity, as to what I shall become, and what I may hope.

What will the moss on the rocks, the oak on the mountain, the eagle in the air, become?

Nothing except what they are and will be by virtue of the qualities implanted within them by the Creator—a moss, an oak, an eagle.

In like manner, the soul will become, what it is capable of becoming, during the immeasurable period of its existence, by virtue of the capacities with which it is endowed, namely, a being which shall approximate towards God, by an unending progress in self-perfection:—a power higher in grade and activity than thousands of powers independent of it, which exist and operate upon it: and which comprehends and governs itself:—a knowledge in which the greatness of God and the splendor of the universe are revealed with a never-ceasing increase of happiness and of extent.

Such is the glory, eternal, and great beyond all measure, which awaits us; our own; which we perceive, not in the visible, but in the invisible. (Matt. v. 48.)

ZSCHOKKE.

Between man and the worm, full of imperfections, which crawls upon the vile earth, and the lofty angel, there is at once a distance, and a relation. The divine reason of man escapes beyond his narrow sphere of life. Man is always man, full of imperfections. By virtue shall he elevate himself from obscurity and degradation, into loftiness and splendor, and become immortal, after his brief life.

Uz. (*Poem.*)

Where are the countless millions who have here assumed and laid down their bodies?

The material of those bodies is yet here; but their immortal part has departed.

The material, changed into new forms, has become a constituent of other earthly beings. But the immortal has not re-appeared.

Oh, where is that undiscovered sacred land to which death introduces spirits? Whither do they go, with their new life, and no longer oppressed with earthly fetters?

Beyond space and time is the abode of the Eternal; where there are no more limits; where—am I capable of the thought?—there is no Where or When.

Me also wilt thou receive, nameless Beyond; and my whole heart, thirsting after immortality, aspires after thee.

Beautiful is this earth; but my heart belongs not to it. Sweet is the consciousness of life, but my heart demands another existence.

Tremble not, great and noble heart, full of immeasurable desires! Tremble not that thy destiny is a mystery; that a deep night overhangs the region towards which time is silently hurrying thee, and within which it shall cause thee to vanish forever.

Remain true to thyself; and faith and hope shall never leave thee.

The more thou hast confidence in thyself, with so much the more courage wilt thou advance towards the secrets of thy future.

K. H. HEYDENREICH.

What is the destiny for which God has summoned me out of nothing?

Was I born for a mere momentary phantom, a transitory existence between cradle and coffin, for unknown designs, or for the purposes of some being unknown to me, who amuses himself at my laughter and at my tears? Shall I fall and disappear and be gone forever, like the flower in the garden, or the day-fly?

But how can I conjoin these ideas with that of the infinite perfection of God?

Why have I within myself the living conviction that I am the purpose of myself?

Why do I discern lofty purposes, which in so brief a life I can not pos-

sibly attain; while other creatures have no qualities except such as they need for the completion of their earthly existence?

Yes, man is soul; the body is dust; only the garment and agent of the soul in its earthly place for the enjoyment of the earth.

The body, the animal kingdom, with which we are surrounded, changes with the year. The soul grows richer in knowledge, and feels that it remains the same which it was at the first beginning of its consciousness.

The body clings closely to the earth from which it comes; the soul finds no rest in what is earthly, and is never satisfied with the objects which it attains, but from the fulfillment of one wish aspires after that of a second, then of a third, and so on to infinity.

Thus the soul is an actual permanent part of man; and the invisible and eternal is its life. Its origin is divine, and to the divine it tends.

ZSCHOKKE.

The human race has a double right of citizenship; in heaven, and in nothing. God has created him from the best of all matter; half for eternity, half for destruction.

VON HALLER. (*Poeta*.)

Man may be considered from three different points; as human being, beast, and man.

As human being, we are to consider his body, and the perfection of it.

As animal, his perfection consists in his possessing the faculties and powers which spring from the union of these two constituents.

But as man, his greatness consists in the degree of his sensibilities, and of the self-control by means of which his soul can effect some actual result, proceeding from its own inward principles.

The more, therefore, man possesses, of self-dependent efficient energy, and the more completely the arrangement and powers of his organization are united for this purpose, so much the greater is his share of human character.

This is the rule used both by the common understanding which follows its feelings only, and by the cultivated reason; and which is recognized as the right rule, in the investigation of man.

TETENS.

How high soever man stands above all other creatures of the earth by his more perfect physical structure, especially his upright carriage, of which the ancients said that he was so created that he might readily look up to heaven and be reminded of his high destiny, (Ovid, *Met.*, l. 85, 86; Cicero, *De Nat. Deor.*, II. 56,) he is still further elevated by virtue of his intellectual gifts.

His understanding is far beyond the intelligent principle in animals.

What are all the arts which the most intelligent beasts learn from men, compared with those which men themselves have invented and carried to an astonishing degree of perfection; from the commonest mechanism up to the arts of the painter or sculptor, the physician or surgeon, the surveyor, or the astronomer who measures the depths of the heavens and subjects to his calculations the movements of the heavenly bodies?

And even these are but small compared to the dignity of the supersensual world, the divine realm of religion, which man's reason reveals to him, even though surrounded with a secret veil.

This is an exclusive advantage of man over the beasts; his reason; a divine spark in human nature, the true image of God, of which Cicero justly says, "Between man and beast the greatest distinction is, that the former is possessed of reason."

Where do the beasts show any elevation of ideas, or any aspirations for the ideal, the absolute, the perfect?

Do they advance at all according to any law, in any theoretical or practical accomplishment of infinite progress? Do they not rather all

reach to a grade of attainment and development, fixed by a lower natural law? Is not theirs a finite perfection, and are they not precisely the same, and neither better nor worse, than they were thousands of years ago?

If, however, man is a reasoning being, he is also a free moral being; a being who can only attain to that moral perfection which is his greatest good, to that self-satisfaction or blessedness, of which he is capable, by means of effort.

If man is, as his inner nature clearly proclaims him, a moral being, capable of infinite perfection, and destined to it, he must therefore claim to be, in his higher nature, immortal. Faith in individual existence and action after death is, as Kant says, a requirement both of the conscience (practical reason), and of faith in God, and this is so true that the materialistic philosophy of the old investigators, conducted from this moral basis, was convinced of the immortality of the soul.

Considering all this together, we can justly say that man is a double being; standing with his feet on earth, but whose head reaches to heaven.

In the former respect he is a being of the senses, in the latter super-sensual.

Nothing that is maintained relative to the different races of men, disproves this statement.

Kant.

High above all beings exists God, the creator of all of them; who unfolds the drapery of the stars, and exchanges night for the gossy morning. Along the golden lines fixed by his almighty power he makes his sun hasten, and rolls the wheels of all creation along a strictly defined path.

But in more unexplored roads he leads the blood through the heart of man, causes him to alternate between pains and longings, and to fall into joy or grief; gives us, as spiritual beings, the control of ourselves, to shape out for ourselves our inward world; and leaves to us the dangerous gift of a free will; which brings us either a curse or a blessing.

The mighty planets roll round the girdle of the sun; we see the stars compass them about; and the ocean rests upon the land. See, the worlds swing round in immeasurable circuits. See mountain and grass and tree, lift themselves towards planetary space.

The planet flies upon its fixed path, but man feels it not. Splendid are the ennobling garlands which virtue weaves for man. They knit together peoples and hearts; consecrate the holy flame of love, and heavenly warmth, felt and recognized, draws the human heart towards the highest.

Without, where the worlds shine, prevail the laws of wisdom and power; and in order pass on in their turns spring and winter, day and night. Justly and wisely ordered, the stars pass round the circuit of heaven, the drop assumes its proper form, and the sea roars in its mighty power.

But they know not the wisdom that directs them, and only wait blindly the hour for appearing; but in men there enlightens and burns the divine spark of natural freedom. He obeys in knowledge of law; and steers boldly forth upon the sea of eternity, with the sail of knowledge hoisted upon his wandering earthly vessel.

Death and change are the words that rule here, in space and time; upon the gates of this earthly temple appears the word Transitoriness. As the leaves fall from the trees, so one day, in the halls of heaven, in wild storm of woe, will sun, moon and stars perish.

The soul of man stands high above death and destruction. Though suns bury themselves in chaos, the spirit rises in its power above them; and seeks its home, its promised abode, that the powerful judge may recompense it for what it endured in its temporal prison, while doomed to its earthly nature here.

And thou creepst in the dust of the earth, lofty and God-created spirit! Dost thou not feel the creative force which lovingly impels thee upward? and dost thou, forgetful of its greatness, dost thou fall, raging wickedly, from the bosom of the clouds into the muddy grave of pleasure?

Recall to your bosom the power which raised thee above earthly things. In grace and in will, recognize the bridges from time to eternity. Wilt thou foolishly destroy them, and rise up against thy better self? Wilt thou faithlessly forget the high vocation for which the almighty ruler has created thee?

MORIS. (*Poem.*)

In this consists the dignity of man; that, being raised by form and endowments to a reason and freedom higher than those of beasts, he may become conscious of himself in God, may seek his destiny in similarity to Him, may consider himself the ultimate object of his own actions, and may, according to the order of nature and right, advance to a higher stage of perfection.

"Human dignity," and "Possession of the divine image," are perfectly synonymous.

Though by organization nearly related to beasts, yet man is distinguished from them by the nobility and form of his body, as well as by his possession of individuality.

Man only, on earth, has the right to be, by means of his intellectual nature, the object of his own reasoning actions; while plants and trees are for the use of men, he is for himself, and for the development of his inner nature; since God, the highest I (Exod. iii; 14), has given him, with life, the image of His own self-dependence and immortality. (Gen. i; 27, *Wisd. of Sol.*, ii; 28.)

The life of beasts is only an action measured off between two fixed points; but the life of man is moving incessantly between finitude and infinitude. With every beat of his heart there opens before his consciousness an unbounded horizon, towards which his inward thoughts and wishes aspire; a world of feelings relating to eternity.

Like a progressive member, this sea of the mental emotions has no shore.

There spreads itself before his gaze, a world of endless freedom; and thus the prospect of an infinite progress, for which the Creator called him into being.

This is the heavenly law of freedom (James i; 25), and the freedom of the children of God. (*Rom.* viii; 21.)

As by the reflection of the Me, the common empirical consciousness, that central point of the knowledge gained by experience for the use of our earthly is reflected upon the inward senses, so, by the endeavor after infinity, the Me of man is reflected in the idea or picture of God, his father; and thus the consciousness of the senses is expanded to a consciousness of himself in God, the eternal basis of his being and life.

Moreover; man, as an organized being, attains to that stage of perfection which nature has limited for all earthly creatures, and then proceeds on again towards dissolution. But as a resolving and acting being, he not only has a definite duty to fulfill every moment, by which means he gains an inward value, but also the sphere of his virtues expands as he grows older, and though his organic powers fail, yet his heart and his will are purified, so that he comes to seek good for its own sake, and draws his latest breath still with the desire of a higher degree of attainment.

Pure and faithful love to God under the guidance of a clear and living faith, is the seal of immortality (2 Cor. i; 22), which the pious preserves within him as a pledge of everlasting glory.

VON AMMON.

The characteristic efficient principle in the training of the reason is reflection ; which seeks to disjoin its life from the universal life of nature, and to live a life of its own, by its own rearing and self-governing operation.

Accordingly, we can set off three grades of human training :

1. The condition of self-developing, merely mechanical skill, by means of nature, without reflection ; of reason as it first develops itself ; of innocence ; the golden age, when the gods lived among men ; where a more luxuriant vegetation flatteringly received the reason ; where nature brought up the growing reason, like a pet child, in paradise.

2. The condition of self-developing reflection ; where the awakened reason seeks to escape the guardianship of nature, in order to live by its own powers and after its own will ; a period of contest between education and mis-education ; the condition of the iron age ; of the plough and sword ; of sin ; of the opposition of the reason to itself ; where the vegetative principle operates without restraint.

3. The condition of completed reflection or of the dominion of the reason ; of regeneration, forgiveness, salvation, the millenium, everlasting peace, and of a continual hallelujah.

What, now, is the destiny of man ?

It is an eternal one, whose law no earthly ear has heard, no earthly eye has seen ; and the veil of its mystery no mortal reason will remove.

FRIES, *New Critique of Reason*, III., 239, &c.

As falls the flower of the field, so the mourning friend seeks, but finds no more the friend he loved. But only his body returns to earth. Let it ever be so ! Let it be dispersed abroad, for it is earthly ; if only its inhabitant remains.

Can this striving, this urging upwards towards perfection, this premonition and languishing after immortality, this spirit whose thoughts include whole worlds—my brother, can all this be sunk in the grave ? Can God have created all this merely in derision ?

No ; thou dost not, eternal one, create in derision, nor in vain. Wisely hast thou enveloped thine image, the noble living spirit, in dust. This body may be destroyed, but the freed soul will joyfully direct its course towards the lofty choir of spirits above.

Voss. (*Poem*.)

Those of our recent investigators of nature, who, like Vogt, Moleschot, Büchner, &c., have reasserted the long-ago exploded claim of materialism, that what is called the mind, in man, is nothing but a phosphorescing of the nerves of the brain, &c., resemble, by their extreme and prejudiced devotion to the bodily side of nature, at the expense of the inner eye of the reason, people who should blind their eyes, and then assert, in spite of the whole world, that everything is plunged in night.

As truly as the field of mental life is as distinct from that of the material being, as the heaven is high above the earth, just so certain is it that an analysis of what pertains to space and time, can no more attain to the essence of a spiritual existence, of a nature different from that of bodies, than one can examine the heavens with a diving-bell, or make furrows in the ocean with a plough, or rise into the air with a freight train.

The bodily eye can reach nothing, either of the spirit of God, or of the spirit of man, the image of God.

Corporal investigation can penetrate no further than to the comprehension of the powers which operate in nature, and unless those pursuing such investigations open the eyes of their mind, and open their ears to the voice from above which is to be heard throughout all our earthly life within us, in our desires and aspirations, and especially in the holy commands of the conscience, always witnessing the high dignity and destiny

of man, in such case, they have then reached the limits of human knowledge.

But these one-sided investigators of the inferior sciences of nature ought to recognize this fact, and not to presume to make assertions either for or against the moral dignity and eternal destiny of man. They ought to admit that the instruments of mere material natural studies can not avail within the realm of spirits; and at least be modest enough to limit themselves to the statement that from their point of view, there is no proof of individual immortality.

All this follows both clearly and naturally from the premises laid down.

But it would then by no means follow, that a higher method of natural investigation, a method under the guidance of that reason which, as the medium of knowledge of the divine, is what characterizes man as man, in the highest an investigation in that region of the spiritual world which includes ourselves, and which is as much a portion of nature as are space and time, which indeed may be likened to the illuminated side of the moon, while the other parts of it correspond to its dark portion,—it by no means follows that such a method could not demonstrate the absolute certainty of the immortal life of individuals.

And again; if we pursue this higher investigation of nature on these principles, we shall continually more clearly discern the stars of faith in God, virtue and immortality shining upon our heads, in proportion as we penetrate further and further, and learn, that our longings, aspirations and hopes, as well as our reason and conscience, are calling to us, as eternal truths, man is a citizen of two worlds, the earth, and the heaven, of which Jesus says, "In my Father's house are many mansions."

Are these difficulties, namely, ignorance respecting our connection with the body, and upon our connection with the other world, which are based upon our necessary ignorance of man—are these difficulties to break down a faith which singly solves a thousand greater difficulties, and does not leave our existence without a purpose, our sorrows without any explanation, and the divine unity within our hearts—the triple voice of Virtue, Truth and Beauty—a trinity of tormenting goddesses, three frightful contradictions.

From the shapeless thread-worm up to the beaming human countenance, from the social chaos of primeval days to the present age of the world, from the first movement of the invisible heart up to its strong full beat in the youth, there is a divine protecting hand, which guides and supports the inward man, the child of the outer, which teaches him to walk and speak, educates and adorns him; and for what? Is it that when he shall stand, a beautiful demi-god, upright and lofty, among the ruins of his shattered corporeal temple, the arm of death may smite down the demi-god forever?

And upon the infinite sea, where the smallest drop of water originates an immeasurable circle of movement, has a life-long ebb and a life-long flow of the soul no result except the end of all results—annihilation?

And inasmuch as the spirits of all other worlds must fall and perish for the reasons which prevail with those of this; and since of the over-full immensity of shrouds and of bridal veils upon this earth nothing is to remain except this ever-sowing and never-reaping spirit of the world, watching while one eternity mourns over another:—therefore in like manner the spiritual universe must be destitute of any aim or end; for this would be a course of development entirely objectless, being expended upon ephemeral beings existing in succession within the universe; wasted upon mortal beings in the midst of immortal ones; objectless for all such of these ephemera who were dead, and most of all for the last in succession of them. But this is an impossible supposition.

And all these contradictions and riddles, which break up all harmonies and all strings of creation, must be received, if we doubt or disbelieve in immortality, merely for the reason that we are aware of two difficulties, which the theory of our annihilation does not solve, either!

Death is noble.

Behind its dark curtain, death completes its silent work, and prepares us for the other world; and we mortals stand with eyes wet, yet stupid, before the supernatural scene.

JEAN PAUL RICHTER.

——— Death is the crown of life;
Was death denied, poor man would live in vain;
Was death denied, to live would not be life;
Was death denied, even fools would wish to die.
Death wounds, to cure ——
The King of terrors is the prince of peace.
When shall I die to vanity, pain, death?
When shall I die?—When shall I live for ever?

YOUNG.

Lift thyself, my soul! Escape from thy slavish burden! Rise upwards thou immortal! Be great, and feel thine own dignity! It is that of a God, and of a tribunal. Therefore, my soul, sink not down amongst the dust of the earth!

Canst thou, who raisest thyself to the inaccessible stars, and with lofty courage piercest deep into the immeasurable, who dost always rise and never fall—canst thou, the soul, an emanation of the life of God, ever utterly perish?

Shall death destroy a spirit which penetrates such depths, rises to such heights; a being which conceives of its creator, a will which honors Him, a heart which trains itself in virtue, and which loves Thee, thou Infinite Being?

And does no flaming judgment fall upon sinners who hate Him? Do thy thunders not fall upon the sinner's head? Shall the fool live in superfluous abundance, while wisdom, like Lazarus, shall beg while living, and then die?

Is truth only a game, a sport for this life? Are our moral feelings only given to torture us? For vice will prevail forever, if virtue is never to conquer, never to find any Savior.

Arouse thyself, despairing soul, from thy fearful death-shudder! Even thy skepticism testifies to the immortality of the soul! And every solicitude which tortures thee, and every happiness which thou lackest, loudly proclaim thy nobility.

Shall God, who created every being, to increase the glory of his creation, destroy the soul, the master-piece of his power? Let doubts assail thee as they may, God is the only being who can destroy the soul, and He will not destroy it.

SCHUBERT. (*Poem.*)

As fanaticism is a disordered condition of the feelings, so is unbelief a disorder of the understanding. In violation of the laws of God, it usurps the dominion over the reason, which only ennoble us to the rank of men, of the image of God, and leads us to the knowledge of God, of His will and of our own immortality; and because it can not hear what is eternal with the bodily ear, nor see it with the bodily eye, nor lay hold on it with the hands, it asserts with mournful self-deception, that it is not true.

Those who doubt or deny the eternal dignity and destiny of man, are like a savage who, never having seen a village in his primeval forests, comes into a great city, and indeed wonders at its public places, its splendid streets, its rich palaces, but will not be convinced that it is an architectural work, but remains fully convinced that the city, like his own forests, grew out of the earth.

I live forever, even though my body dies ; else life would be torture. The soul passes to a better world ; to pleasures without number. This sweet presentiment comes from the Lord of life ; He hath not given it to me in vain ; I see my higher destiny.

In nature's realm, not even the smallest particle will be lost. Fool ! dost thou then hold man's soul to be only the spoil for annihilation ? He who hath given us being will maintain what He gave. He will create life out of destruction, and will raise its germs even out of the grave.

I live for ever ! I incessantly feel an impulse towards activity ; and although I strive with all my powers, yet I never reach my aim. Wherefore have I this courage, this striving, this germ of higher powers ? Is it for this span of life ? How petty ! How perplexing !

Here, the mind struggles for truth and for light ; yet delusion and error hem in the seeker's path. He can not reach them here, for so much must remain unknown to him. Ah, this thirst for truth will certainly be quenched, there, where the fountain of wisdom flows purer.

How often, here, does the real lover of man lament ; misunderstood, persecuted, disgraced ; while the wicked enemy of virtue, in happiness, lifts high his insulting head. But throned there, above the stars, He will one day hold his court ; and virtue will be rewarded in a better world.

Therefore I rejoice, and my whole soul glows, filled with higher aspirations. Even at the grave sounds high the triumphant hymn for the joy soon to come. I know in whom I have believed ; I know what God hath promised to me. Lifted above the dust, my spirit is immortal.

Thus dies the meadow herbage, in its winter sleep, and the leafless trees. The spring returns and the fields bloom again, and the forest assumes its crown. O beautiful picture of life, thou meadow in spring garments ! My head shall also be exalted in the spring of eternity.

Immortality, thou belief who dost inspire the souls of mortals ; who in trouble dost disperse the darkness of grief, and liftest him to heaven ; Thou dost beam upon me with more light and warmth than the sun ! My happiness and my pleasure, thou art all my pride. *Anon.*

As Kepler discovered in the lower realms of nature, the universal laws of gravity and attraction, which influence all things, so did Kant discover a similar cosmical law of morals in the domain of the intellect, which like faith in God, raises our conviction of our moral dignity and eternal destiny above every doubt.

As visible and mental nature are only two sides of one and the same nature, so are the laws of the former reflected in the latter, and those of the latter in the former, and both reveal themselves to us as equally eternal. Thus moral certainty is as impregnable within its sphere, as in the department of mathematical ocular intuition, the propositions that the circle is round and the square quadrangular, and that twice two are four.

Thus, however children in understanding may doubt it, in their delusions, and because they can not comprehend it, there abide these three, faith, hope, charity, even as the apostle says

Kant's experiences are true :—

"Duty, thou great and lofty name : who dost not reach any desired object by insinuation, but requirest subjection to thyself ; yet threatenest nothing to stimulate natural aversion, or to terrify ; who dost only set forth a law which is of its own power assented to by the feelings, and exacts, in spite of the will, reverence if not always obedience ; before whom all the passions are silent, though they may be in secret conspiring against Him who is thy appropriate origin ; and in whom man recognizes the primary source of that noble descent which proudly rejects all connection with mere inclinations, and a deviation from which source is the indis-

pensable condition of that worth which only man can work out in and for himself.

Nothing can be less than that power which elevates man above himself considered as a part of the visible world; which connects him with an order of things conceivable only by the reason, and including both the whole visible world, and also the empirically determinable existence of man in time, and the totality of all final causes—which totality alone is adapted to such an unconditioned practical law as the moral law.

This power is personality; that is, freedom and independency from the mechanism of collective nature; a condition, however, which is to be considered one faculty of a being subject to a law pure, practical, and peculiar to itself, as being prescribed by its own reason, and whose person, as a part of the visible world, is thus subordinate to its personality, as far as they are both comprehensible. Thus it is not to be wondered at if man, as belonging to both worlds, should regard his own being, considered in relation to its second and higher destiny, no otherwise than with reverence; and should treat its laws with the utmost respect."

Critique of Practical Reason.

As the astronomer can by the known laws of physical nature compute with unfailing certainty the beginning of the eclipses of the sun and moon, the appearance of comets, the transit of planets, and even the greatness and distance of the different heavenly bodies, and their paths, in like manner may be discovered and laid down, by the moral law, the great and universal law of the moral world, the destined immortality of man.

To prepare him for this, as the highest of all possible destinies, must be the main problem of education.

High above me, Thy starry heaven, and thy Law, O most Holy, within me, lift my spirit above the uproar of this earth, and raise it in devotion to thee; and my astonished mind, O Infinite One, glows with the holy feeling of prayer.

A sense of my dignity as a human being impresses Thy holy law upon me; and even under the burden of this earthly life I feel the nobility of my human existence, whenever I fulfill with zeal and competence the requirements of Thy law.

I ought—I will love whatever is good, not because in this life every virtuous deed receives a reward, but for the sake of the intrinsic excellence of virtue. It raises the spirit high above the grave, and time, and inspires us with faith in immortality.

To subject to himself whatever is unreasoning, and to govern the same, freely and according to his own laws, is the ultimate object of man; which also is, and must ever remain unattainable, unless man ceases to be man and becomes God.

It is part of the idea of man, that his ultimate final cause should remain unattainable, and that the road to it should be an intimate one.

Also, it is not the destiny of man to reach this end.

But he can and ought to approach ever nearer to this object; and therefore this approximation towards it, during infinity, is his true destiny as man—that is, as a reasonable and free being.

If now we call this complete agreement with himself "perfection," in the highest sense of the word, then to perfect himself to infinity is the destiny of man.

He is placed here to become continually morally better, and to render everything about him corporeally better; and—if he be considered as a member of society—morally better also; and thus to make himself always happier.

FICHTE.

The flame rises upwards from the altar, as do a thousand sister flames; as if they would escape from the gross and dark matter to which they are bound down.

Thus is the soul always longing; the divine spark ever tends towards its home, high above the dust and sorrows of earth, where the moon and stars are wondrously shining.

Ah, with what a cloak of dust is it covered in! It will one day throw aside its clayey bonds, and even now it feels itself a stranger here. And when these bonds are loosed, our inner nature will liberate itself; the ashes will sink down, but the heavenly flame will be freed.

SCHOTTIN.

Small is the sphere of man upon this planet, but great the problem which his ennobled heart proposes to itself: to believe itself created, not for itself, but for all; and, penetrated with a consciousness of God's moral order, which, equally with the soul, is the rule to which the government of the world is adjusted, to labor as God does, but within the circle of its earthly being.

In every situation, this spirit can be kept in activity; and though our fate should confine us within ever so narrow a sphere, no fate can deprive us of our sentiments.

Even in him who is closed up and cut off from all practical influence upon the world, his enthusiasm may flame up in a thousand noble wishes for the world and for humanity: and such wishes will be reckoned as deeds before the tribunal of the Holiest.

HEYDENREICH.

Suns shine, earths roll throughout the wide halls of the universe; and nature is infinite. All the worlds sing psalms; in the sun, and in the grass-leaves, we discern the plain traces of eternal wisdom. But nature only obeys the law, without any will. Man! thou art more than a whole army of motionless worlds.

God hath given thee freedom; and freedom gives thee wings to rise upwards, and power to approach towards what is better. In this external body, built of clay, dwells a free will, a heavenly gift, the ennobling trait of humanity. Through this thou canst boldly struggle up the steep path, which leads you to the choir of superior beings. By the help of this thou canst hasten towards the destiny to which God, thy God, calls thee.

Thou givest light to the sun, and to the worm his brief life; to us, freedom and immortality. Father! Thou shapest the worlds, thou formest our spirits to virtue, and trainest them for eternity. The great work is thine, to which we devote our life. Let us with boldness, made free by virtue, always true to duty, press towards the palm of perfection.

Even man himself is at first to be considered as only a plant. (*Poem.*)

Before he sees the light, he has no other life, so far as can be ascertained, than the monotonous vegetable-like life which, by the divine law, draws to itself materials for nourishment, assimilates and uses them.

But as soon as the child looks upon the light, he is more than a plant.

He at once feels pain and pleasure, and his crying is audible. Soon, his mother rejoices at his first laughter. He looks about him. His eyes look with most pleasure towards the light. His pleasure shows that he is not destitute of judgment. He has a soul.

The mind of man is so entirely different from the earthly part of his being, that it can not enter into any relations with his bodily part, except through the medium of that soul which he possesses in common with un-reasoning beasts.

In the child, the future man, it is the earthly part that is first developed.

After this, there appears the activity of the animal nature or soul.

Lastly, as highest of all, and to which all are subservient, appears the mind, the living and self-conscious I, which with wonderful and divine light shines through all the faculties of the soul, recognizes whatever is around it, penetrates the universe, and comprehends its derivation from God.

As the body is the vehicle and the coarser instrument of the soul, so is the soul the vehicle, the finer instrument, the immediate garment of the mind.

As the soul, through the nerves, pervades the whole body, so does the mind, like a holy light from heaven, pervade the existence of the soul, and of its faculties.

Who could place a holy wise man, or even a child of a few years old—having reference to his high mental endowments—in comparison with a beast, however old, cunning, or intelligent?

The beast, having only an animal soul, and being governed only by habit and desires, is incapable of human speech. The speech of man is the exclusive property of man, the work and the fruit of the mind.

Even the most cunning beast lives in an unintelligent consciousness, led by dim impulses, ruled by desire of pleasure or fear of pain, surrounded by obscure pictures from his experience. His best services are, dumb and useful habits.

Their faithfulness and love do not properly deserve these exalted names of virtues to which they are strangers. These qualities are only instinct and force of habit; not conviction of duty and right, not respect for what is good and noble.

The utmost skill displayed by a bird in hunting after its food, or in passing to an unknown region in autumn, or in finding its home again in spring, is no more wonderful than for the new-born human child to seek its mother's breast.

And however intelligent are the constructions and labors of bees and ants, their art is no result of their own reflections, but that of blind impulse.

It is entirely otherwise with the activity of men, and their acts.

The human race has for thousands of years been incessantly progressing in perfecting its condition.

Men lived at first in forests and caverns, then frail huts; now they erect splendid palaces, filled with all the luxuries of life.

Most of them wandered, naked or half-clothed, in dread of wild beasts; now they go protected by clothing against the inclemencies of the storm, guarded by the weapons they have invented, and are the terror of wild beasts, and the lords of the earth.

No country is too distant for them, no mountain too high. They sweep over oceans, seas and rivers, though without the nature of a fish; and without being furnished with wings, they raise themselves to the highest air of heaven, where the eagle can scarcely penetrate. They pierce deep into the dark bowels of the earth, where no worm is found, and there they seek the treasures of nature, to satisfy their manifold necessities, and to become more fully acquainted with the splendor of creation.

But all this is the product of the mind, that spark from the divine source of all light.

It is the mind which gives to man all his elevation above whatever else lives within the realm of nature.

It is the mind which makes him competent not only, like animals, to collect, arrange and compare single experiences, but also to preserve and make a practical use of the collected experiences of many thousands of past years.

It is the mind which, by means of its truly divine power, collects a

thousand different phenomena under one single comprehensive idea, and out of the theory of innumerable thoughts, constructs for itself as it were an inner world full of unity, order and clearness; and thus acquires more knowledge than the whole visible world and its experience of thousands of years could tell.

For, like the spirit of God over the waters of creation, he moves over all created and visible things; he belongs to a higher world, from which he looks down upon what belongs to the dust. He is nearly related to the Most Holy, shaped after the image of God. He bears the marks of his divine origin; his mind reverts to God; he lifts his gaze to the infinite; he speaks, and prays, to the Creator of the heavens and the earth.

Of all this lofty super-sensuous life, the unreasoning beasts have no conception. Nor have they any of the object of their existence, or of the attainment of any greater perfection and happiness than what consists in the satisfaction of mere animal desires; none, of any previous ages; and still less of an eternity, or of an infinite existence.

The plants, without sensation, cohere to the earth, bound fast by their roots. The animals creep or walk or fly about the earth, to which is owing the entire sum of their enjoyments.

But the human soul sees clearly past all the complications of life, searches after causes and effects, battles with the power of the elements, and often overcomes them; dams in the floods of the ocean; and controls the lightning.

The eye of animals is blind to the beauties of nature. But the mind of man, enraptured with the splendor of the works of the Creator of the worlds, examines the beneficial powers of nature, investigates the peculiarities of animals, and penetrates throughout the endless spaces of the world's edifice.

ZSCHOKKE.

How great and wonderful, O God, appears man, thine image! How nearly, filled with thy spirit, is he placed to the angels! How hast thou lifted him up, and adorned him with majesty! Thou hast thyself called him Lord, and hast given the scepter into his hand.

Even the young sucking child bears the impress of thy wisdom. His stammering and laughing are, O thou holy Creator of nature, a beautiful song of praise, a sweet melodious thanksgiving to God, throned high in heaven, and yet dwelling among his human creatures.

The powers of men unfold themselves progressively, along the pathway of life. He realizes great thoughts in great deeds; land and sea are subject to him; and he cries out aloud in his rejoicing, "God loves me more than moon and stars. I call their master my Father!"

I am inspired by his spirit. They roll blindly along their path; but He has called me, chosen me, to look in freedom up to heaven. And I do not even need the light of the stars. For when all my senses shall fail, my spirit will still exist forever.

If we were made to tend as the magnet does towards the pole, with eternally vain endeavors, towards a point of perfection beyond us, and which we could never reach, we might justly mourn for ourselves, as blind machines, and also for the very existence which should have condemned us to such a tantalizing fate, and should have made our race nothing but a mere maliciously and ungodly created object of derision.

If we consider man as we know him, according to the laws which lie within himself, we shall find that we know nothing more lofty than the essential humanity of man; for even if we figure to ourselves angels or gods, we conceive them as ideal men.

For this object, this human character, is our nature organized; for this purpose are given to us our finer sensibilities and impulses, our reason and freedom our health our language, art, and religion.

In whatever social condition, man is bound to seek nothing else, can properly endeavor to organize nothing else, than this humanity, as he understands it.

To this end did man invent various laws and forms of government; to this end is property protected, and labor, art, trade, intercourse, facilitated; to this end are wars waged and treaties made.

In all the organizations of nations, from Sinai to Rome, in all the varieties of their constitutions, in their war and peace, even in all their crimes and faults, is recognizable the chief law of nature, "Let man be man! Let him adjust his own condition according to what he recognizes as best!"

So simple is this natural law; so worthy of God; so concordant with the human race; and so fruitful in good consequences to him.

If that race is to be what it is, and to become what it may become, it must possess a self-acting natural realm about it, and an area for free activity; and this must not be interrupted by any phenomenon of a nature strange or unaccountable to it.

Man can not live and maintain himself, if he does not learn to use his reason.

As soon as he begins to use it, it is true that a gate is opened for him to a thousand errors and mistaken attempts; but a road is at the same time found—even by these very errors and mistakes—to a better use of the reason.

HERDER.

All those mental characteristics of man, which he develops in art and science, are by no means the loftiest.

The divinest quality of the human soul is its aspiration after what is divine, after a union with the Holiest; its struggles after a perfection and completion, which are entirely independent of everything earthly.

It finds no rest, except only in what is true; no pleasure, except in what is right.

It is penetrated with an inexpressible reverence for what is beautiful, noble and virtuous; and is full of natural repugnance to untruth, to viciousness, to imperfections of every kind.

An animal may have understanding; but only men possess that higher reason which is the lawgiver of holy and upright actions.

An animal may possess cunning, but is not capable of wisdom; which is a peculiar property of the human mind.

Man alone stands midway between the earthly and the super-earthly; between the finite and the infinite; between the lifeless material world and the Divinity which is the life of all things.

His foot is on the earth, but he carries his head held upwards towards heaven.

The body is only the instrument of his mind.

The bodily nature has one law, for the maintenance of itself; the soul another, in its feelings; but the mind has a higher one—the mind, whose vocation is to eternity, to unending perfection, or happiness.

ZSCHOKKE.

The most important presupposition of pedagogy is, the living powers of the soul.

These should not be forced. They must make themselves master little by little, of whatever they need to use or possess; they must digest and obtain firm possession of original ideas, if they are to reproduce beautiful representatives of them.

These powers are not unknown to us. They are the spirit of God, the Holy Spirit; the creating power of the Almighty, revealed to us, yet working, spreading, forming, everywhere and in obscurity.

To educate is, to develop these powers in freedom; that is, according to the laws of God; to give them according to God's will; to ennoble them; to make them like God.

But this high vocation is possible, again, only through the aid of the divine power, and with its blessing.

Without it, all teachers, preachers and educators, are merely chemical cooks.

Pedagogy is no science and art of making good men; it is to guide children so that they shall become such, through the assistance of God.

But this capacity of becoming such, presupposes an innate, assimilating power. EDWIN BAUER, *Teacher of the exact sciences in Zwickau*.

Despair not, thou shalt arise again—the nobility of humanity is too great. From eternity the lot was destined to thee to rise up again, elevated and purified; and even though mighty hands of wicked men have sworn to defile thy excellence, they shall one day stand unmasked in the sunlight; and shall not conquer.

Here, powers measure themselves with powers, black night with day, one occupation contends with another, impulse strives with duty, systems contend with systems, and the blood and tears of men stream, for lofty rights and truths—and also for those who violate them.

What is it which inspires your aspiration for truth, justice, nobleness; your weeping of hot tears after full perfection? What elevates heroes, teachers, judges, lofty thinkers, poets? What is it that glows in every feeling, and ennobles the efforts of our arts?

Oh, it is presentiment; a faint breath, a rapturous foretaste of the loftiest height of your own worth; a glimmer of the brightness of your destiny. Before your wings have their full sweep, it is true that the grave-mound must cover us. Yet we still aspire; and they will stretch themselves out and be borne victoriously upward.

On the altar of thy temple burns brightly the holy light of the soul. And whoever sees the flame ascending shall neither tremble before its blaze, nor—filled with error, strike it down. The whole of that temple is illuminated in which brethren on their knees, are filled with holy things.

Then shall reason grasp with stronger and firmer right, his leading-staff; then shall disappear every night of error, and all chains shall fall away; while harmony, with sweetest song, shall bless the welcome peace; a peace which no fates shall interrupt; for it is protected by the diamond shield of duty.

Triumph, O brethren! Let us struggle, and never pause nor rest; let us do our utmost to release whatever is confined by human force. Then the captives, with powerful wings will fly upward, leaving a blessing upon our graves. We shall be aspiring to a more brilliant path among the stars, and they will be approaching us.

O life, namelessly sweet! We proceed from the bosom of humanity. Man will assuredly elevate himself, for such is the lot destined for him by the creator. O brothers, brothers, see them struggle! Triumph! They rise, they soar higher and higher! We shall see them in the starry path, approaching nearer and nearer to the stars! STARKE. (*Poem*.)

If we should draw a map, with a sky-blue ground, and gold stars of different kinds to indicate the various kinds of educational institutions—academies, universities, seminaries, and so on, down to common schools—and such a map would be much more worth the trouble of making it, than one on which near every town should be marked with a blood-red line the battles fought there—we should see a most splendid map of stars, upon the field of the mental activity of our race. And if this plan should

be followed out for all countries, we should have a most interesting collection of maps of the condition of human nature; and should be astonished at the multitude of means of education among enlightened nations, as we are upon gazing at the starry heavens.

And if we should sometimes find a region poor in stars, or quite destitute of them, still we could not look upon such a map without becoming firmly convinced that the destiny of man is a great and magnificent one; and is, to attain through truth to virtue, through virtue to happiness, and under the guidance of the latter to a perfection higher and higher to infinity.

The nobility of the human mind reveals, in the first cry, that independence which appears in its mode of opposing itself to impressions, without either coming into collision with them, or permitting them to pass by with a merely superficial notice.

From this source proceeds our consciousness, and that invaded harmony which is the holy spring of eternal life.

If you would not realize the apprehension that this independence may be lost in the external world, or may sink into egotism, or may fall into one-sidedness of feeling, seek for some counterpoise against those bad tendencies, the earlier the better; and to your course of training, proceed with reference to the inner harmony of the life.

The child should grow up, that all that is good, great and glorious may establish itself in him; and may blossom out into happiness, through love, that inward fountain of humanity, which is the true means for training a child.

The whole earthly existence should be the development of fitness for a brighter world.

This is the design of God, in the laws of our nature, and in our freedom.

And thus will grow the tree of humanity.

There exists in man a spirit which tends to cut itself free from nature, and to look above the earth. Thus it is that we become perfect; thus, in the loving child, we see the future angel.

This is the destiny of man.

The highest result of human training is thus, that the spirit of each individual shall appear as an individualized separate spirit; and that in education, this same spirit, again, should appear as identical with the universal spirit of all of us.

SCHWARZ.

Man is *the* being, of all earthly beings.

A spark of the light and power of God, (Genesis, i; 21,) he bears within himself, in this world, heaven and hell.

Whichever of these he awakens, burns within him.

If we make angels of ourselves, we become such; if devils we become such.

We have life and death set before us; we may choose whichever we will.

Each of us can go whither he will; for man is free.

God is in heaven, and heaven is in man.

But if man is to be in heaven, heaven must be revealed in man.

The right road to come to God is, so far as we are capable of distinguishing it, for man to come out from his admitted sins.

JACOB BÖHME.

It is difficult to avoid being enthusiastic in considering the great thought, that, just as all sciences, not even excepting the empirical ones, are always tending more and more towards a point of complete unity, so will humanity itself ultimately realize, as a constitutive law, that same unity which at their beginning of their history was a fundamental forma-

tive rule ; that, just as all the rays of human knowledge, and the experiences of many centuries, will at last gather into one focus of truth, and realize the ideas, which had already occurred to one and another great mind, so that at last all the different sciences will be only one, so the different right and wrong paths through which men have hitherto been straying, will at last meet together at one point, where mankind will gather together again, and as one perfect person will obey the same law of unity.

However distant this point may be, it is still the duty of those to whom such hopes are not folly, to promote this great work, and by united labor for the perfection of the sciences, at least to hasten this great epoch of humanity.

For all ideas must have been realized in the field of knowledge, before they can realize themselves in history ; and mankind will never become one, until its knowledge shall have attained to unity. SCHELLING.

If thou wouldst assert thy destiny, O man, forget not that thou art destined to immortality.

Set not thy whole heart upon things which thou must certainly leave, and may leave so soon.

Treat not with indifference things which can and will have a great ever enduring influence upon thy future fate.

Limit not thy desires, thy endeavors, thy hopes, within a moment ; for thou mayest look forward to eternity. ZOLLIKOFER.

Dost thou, O man, seek for thy position here below, and thy destiny ?

Consult for an answer, both thy reason, and thy experience.

Consider thy race, consider humanity, what it ought to be—what it is.

Consider the savage, and the civilized man ; the king, the beggar, the man of worldly wisdom, the Greenlander in his smoky hut.

All assert the same destiny.

When you have collected their answers, compare them together.

We are called by our creator, only and exclusively to be righteous and to be happy in righteousness ; to seek after truth, to love beauty, to desire what is good, to do what is best, to pray to God, and to do good.

MOSES MENDELSSOHN.

Lawyers, educators, friends of humanity ! Let us unite our powers in order to demonstrate to man that amidst the infinitely varied circumstances of life, he will never find inward happiness except in the actual and efficient unity of his character.

In striving after the attainment of this perfection, following steadily and freely the prescriptions of a universal and beneficent reason, he will escape from errors, crimes, and self-accusations.

As man and as citizen, he will find happiness in the testimony of his own conscience.

Thus will man bring the infinite variety of his susceptibilities, thoughts and endeavors, into the unity of a true, pure and efficient moral character. C. VON DALBERG.

If we consider the undiscovered mystery in the nature of man, that is, in one side the consciousness of our gradual development and sinking back again into weakness and earthly nothingness, which follows as closely, even in the period of the fullest life, and on the other side the unmistakable presentiment of a higher destiny ; and also that mysterious and undiscoverable spirit which, we do not doubt, is what keeps the visible organism in motion, and which is so closely connected with it and yet so distinct from it ; when I consider these things I am continually

filled anew with the conviction that the altar of truth is the proper central point of the city of God, to be citizens of which we ought to educate our children.

FRIEDRICH JACOBS.

Where there is death, there is also life; yea, all death, throughout all nature, is only a new birth.

Therefore all representations of death are also representations of life.

How softly does the sun sink down and cover itself up with purple clouds!

But see; when the night is past, then the day rises rosily again in the east, and looks wonderingly again upon the earth which it left only a few hours ago.

See here, O man, thy likeness and thy fate; and grieve not.

The hopes with which every evening passes into the dark night will not deceive thee. If they could, thou wouldst not have them.

Thou wilt not long feel the terror of the winter and of the night, for thou slumberest only to awake again in the morning, amidst the flowers of an eternal spring, and greeted by sounds of holy pleasure. NABBE.

In the belief of a personal immortality is given to our earthly being a significance, a substance, an interest, a purpose, and fixed point of action, without which our life could have no more significance and substance than that of a beast or of a plant.

In this belief, it is worth our while to struggle after mental and moral perfection, even if the next moment were to be the last of our earthly career. Without it, all our moral and mental attainments would be mere imagination and utterly unsubstantial.

In this belief, man can have good courage to throw himself into life, to endure, to suffer, even to offer up his life for truth, right, and morality. A steady star of hope shines upon him. Without it, there would be no moral power, no permanence in a moral life, no permanent dignity of character.

In this belief, lastly, the whole creation assumes a connection and an object; I know for what I am born a man. Without it, we stand before a chaos full of perplexities and contradictions, in which are contending heterogeneously with each other, endowments and power without an object, requirements and rights without dignity or realization, hopes and wishes without any prospect of fulfillment; and in which the element would be entirely wanting, which is required to bring these confused constituents into unity.

Whatever the human race is, that it is through faith in personal immortality.

This faith, which is as ancient and as wide-spread as is the human species, this faith, which was not invented by selfishness and seized and propagated by an unscrupulous priesthood, but which is an essential constituent of our nature, is the germ from which all human culture has developed, and has drawn constant support.

Were it possible—which for the salvation of mankind it is not—to drive this belief utterly out of man, so that no trace of it should remain, the result would be to unhumanize man, in the fullest sense of the word, and to drop him back into the class of animals.

Even Goethe says, "Why should not my faith have a divine origin, and a real object; since it approves itself practically so efficient? It is in the practical that even our own individual existence first becomes certain!"

HUFFEL.

(To be continued.)

II. VALUE AND ESSENCE OF A GOOD EDUCATION.

Harmony, the ultimate object of all things, should exist as in the universe, so in man also, who is a little world in himself.

The harmony of the heavenly spheres should be echoed in the soul of an educated man.

Since it is thus that man attains to the comprehension of the absolute relations of the created world, and of heavenly beauty, he comes into a constant connection with God.

It is to this end especially that education should be directed; which requires:

1. That youth should not hear of anything which may awaken unchaste desires, until they are acquainted with the dignity and loftiness of human nature.

2. That youth should endeavor to attain a ripe development; by means of effort.

3. That parents are the proper educators; and that it is therefore the greatest injustice to separate parents and children.

4. That education should extend over the whole period of youth.

PYTHAGORAS.

Man becomes what he is, principally by education; which pertains to the whole of life.

In education there is a union of watchfulness over the progress of training, and of a course of discipline for intellectual and bodily development.

Education must begin even before birth, with the parents themselves; must constitute a rule of action during the entire life and in a certain sense must exist during the whole of it.

By a good inward and outward education, the best endowed natures are developed; and such as are superior to any that preceded them; and in their turn they will bring up still more excellent ones.

The name of education is not applicable to a system of instruction in methods of gaining wealth or bodily strength, or in any mechanical knowledge, without the intellectual or moral element.

A person may be well trained to seamanship or to a trade, and may yet have no true education.

Only those who are educated in mind and in will, become good. Such take pleasure in becoming good citizens, who will either govern or obey in righteousness; they become noble men, who go forward and train themselves in whatever of perfection is yet deficient.

True education is the most desirable of all that is good; and therefore should not be neglected.

In the soul of man, good and evil lie near each other.

If the latter, for want of education, gets the upper hand, the man falls beneath himself.

But education, which promotes goodness, raises him above himself.

It is by education that the man first becomes truly a man. PLATO.

As long as the youthful mind has gained no moral strength, it should be kept as far as possible from intercourse with the world; for its sins contaminate the inexperienced.

In like manner, children should not attend plays; for there vices will creep upon them most easily, by means of wanton representations.

Pupils should often exercise themselves in contemplation.

The body should be trained with some strictness, in order that the mind may not become refractory.

It is good for the young to select some one noble man for a model.

But young people should not remain too long in this simplicity; for it would become a means of betraying them into evil.

To tell the truth to those in fault should not be omitted. For knowledge of one's faults is the beginning of improvement.

And even where the truth appears to find no entrance, the heart often feels it.

For noble souls, labor is nourishment.

It is not enough to have begun our education; we must also continue it.

It is better for a young man to be serious, than to be fond of pleasure and a favorite in large assemblies.

For it is with young people as it is with wine; that which is sour when new, acquires a fine flavor by age; but that which is sweet at first, becomes sour.

Noble minds are easily excited by what is noble.

It is not important how many books are read, but how valuable.

In order to assist the weakness of children, they should often be spoken to in similitudes.

We should endeavor to reform depraved wills.

The mind should be drilled, as much as the body.

If instruction in wisdom and virtue is to find a good soil in the mind, delusion and error must first be driven out of it, and the understanding must be cultivated.

Just as leaves can not grow green by themselves, but must have a twig through which they may draw sap, so even the best precepts fail, if they stand alone, and are not based upon fixed principles of education; that is, upon the knowledge of what is right, and consistent with virtue.

Goodness in man can not be developed until his reason has been trained.

SENECA.

It has been asserted that what education can accomplish is little; a grain of salt cast into the stream of life, and rapidly disappearing.

But the truth is as a Greek philosopher presented it; who took two young dogs from the same mother, and let one of them grow up without training, but taught the other; and then exhibited them both to the people. The former, who had been taught, instead of eating the food placed before him, chased a wild animal which was let loose, and secured it, while the other one fell upon the piece of flesh and devoured it like a beast of prey.

Even if education accomplishes no wonders, it can do much—very much.

Pride in talents which acquire everything as it were spontaneously, is foolish; for this early ripening is a sign of approaching death; that such learners have become mature before their time.

QUINTILIAN.

Excellent was the saying of the Lacedæmonian educator: "I will teach the boys to take pride in what is good, and to abhor what is shameful."

This is in truth the most beautiful and noble aim which man can have, in education.

PLUTARCH.

The remark was well founded which Crates the Theban was accustomed to make, that if it were possible, he would stand on the highest place in

the city, and cry out, with all his power, "What are you thinking of, you people, that you are devoting all your industry to the acquirement of riches, but take no care at all of your children, to whom you are going to leave them?"

I might add, that such a father behaves like one who bestows all his care on the sandal, but neglects the foot above it. PLUTARCH.

The children of the Persians were from their earliest years taught the love of justice.

Thus, as the children in the schools of Greece were trained in the knowledge of learning and liberal arts, the children of the Persians attended their schools for the sake of learning justice.

In order to accomplish this object the more quickly, it was not thought sufficient to accustom only their ears to instruction in justice, but they were taught to give just opinions on all matters which came up among them, and to fix upon the proper punishment for every error.

Thus the teachers, as public instructors in justice, devoted a large part of the day to hearing and correcting these opinions of the children.

XENOPHON.

The pre-eminence of man over the other living creatures of this earth consists in this: that he can recognize something higher and better than himself.

He becomes what he is, by nature, habit, instruction.

The last two, together, constitute Education, and must always accompany each other; the former, however, preceding.

Instruction has an inward purpose; for it is beneath a noble nature to inquire into the usefulness of what is learned.

Education is to prepare the mind for instruction in morals, as men prepare the soil before sowing seed in it.

Only when the mind has become noble and inclined to goodness, can instruction in morality be given with advantage; it is only when good habits already exist, that principles can exert their ennobling influence.

He who can command, must first have learned how to obey.

The training of youth should be a concern of the state.

Crying is a useful exercise to children.

Children's plays should be representations of their future occupations.

Education is an ornament in prosperity, a refuge in adversity.

Parents who secure a good education to their children, are more useful than those who merely beget them.

The children of such parents owe them not only existence, but an honored and happy existence.

As the eye receives light through the surrounding atmosphere, so does the soul through instruction.

That scholar makes good progress, who follows after those who precede him, and does not wait upon those who linger behind him.

ARISTOTLE.

As once Surdarana, a noble Indian prince, sat on the bank of the Ganges, he heard two sayings, of which one praised the excellence of wisdom, and the other was, "Youth, abundance, high birth, and inexperience, each in itself, are sources of destruction. What must be the lot of those who possess all four?"

And the king reflected within himself, "What is the use of a son neither learned nor virtuous? and what is the use of a blind eye?"

A child with capacity and talent is a blessing; but not a hundred children who are corrupt and ignorant. One moon disperses the darkness sooner than a whole troop of stars.

Fathers and mothers are the enemies of their children, if they do not

cause them to be instructed ; for a man without knowledge remains without fame, then if he possesses youth, beauty and high birth ; he is like a blossom without fragrance.

Like the glitter of the eastern mountains in the light of the sun, is a man of low birth, influenced by the stimulus of good writings.

Youth should avoid evil company, for by it they become corrupted, as sweet water becomes undrinkable by mixture with the ocean.

Education is of higher value than beauty or hidden treasures.

It accompanies us in traveling through strange countries ; and gives us inexhaustible powers.

A man without education is like the beasts of the field.

Amara Sukti, a learned king, had three sons, without industry or talent.

Considering this fact, their father called together his council, and consulted it as to the means for cultivating their minds.

Then one of the council answered, Since life is short and learning is long, it is necessary to consider how to abbreviate the road of learning, and to bring the substance of it into a compressed form.

Thus must the essence of learning be acquired : as the swan draws milk from the water.

Indian Tale.

Since complete happiness only comes with advancing years, for the reason that then only can we co-operate in producing the happiness of others, no reasonable man would wish to pass his whole life in the condition of childhood.

Since every art, and all instruction, is intended to supply what is wanting by nature, the general problem of education is, to develop children, as imperfect beings, into perfect ones.

Therefore the neglect of education is most harmful to the state itself ; since the maintenance and well-being of the state depend upon it.

The best laws are of no use, if the citizens are not morally and intellectually developed.

The best natural endowments will always produce the best political constitution.

But aside from this, it is a shame not to have been educated ; for he who has received an education differs from him who has not, as the living does from the dead.

The object of education is to train children, and others who need it, that they shall learn to know the beautiful, and shall be instructed in everything that is necessary and useful.

The citizen must be morally good, and be capable of noble deeds.

Therefore, the domination of the animal passions must be broken down by the laws.

Reason and understanding are, in man, the aim of nature.

The understanding must be trained through the heart.

Right education consists in this : that men should from their youth up be accustomed to be rejoiced and afflicted as reason requires ; and above all, that the lower part of the soul be in subjection to the higher, the reason.

A sound and well trained mind, in a sound and well adapted body.

All art, all education, should be only complementary to nature.

The better part of man is the reason ; which must therefore be the chief object of education.

Only he who lives in accordance with his nature—his reason—and entrusts to it the care of himself, and thinks and acts in such a manner as is worthy of a reasoning being—only such a man is pleasing to God.

Since the gods concern themselves about men, it follows that the noblest

part of man, the development of the mind and of the moral feelings, is especially near their hearts.

With men to whom this better portion of human endowments is denied, education is wasted.

It can improve nature, but not completely change it. ARISTOTLE.

There is no living being whose nature is so obstinate and cross-grained as that of man; who has a natural tendency towards what is forbidden and dangerous, and does not willingly allow himself to be influenced.

But these sinful natural tendencies can be improved by wise laws, by a mild and just administration of them, and by an education which unites firmness and love. SENECA.

When parents, either from avarice or lack of conscience or ignorance or any other cause, neglect the education of their children, the sad consequences which avenge this neglect do not fail to follow.

When sons so treated become men and give themselves up to the most fearful vices, then, when it is too late, the parents who ruined them, experience profound sorrow.

A good education, including proper instruction, is the first, second and last, principal means by which youth become virtuous and happy; and all other advantages, as riches, high birth, beauty, &c., in comparison with such an education, are not worth striving after. PLUTARCH.

That usual complaint is altogether a mistake; namely, that but few men are by nature endowed with the capacity for comprehending what is brought before them.

On the other hand, it is found that most men manifest ease in thinking, and aptness to learn.

This is an important distinction between man and beast.

As birds have born in them the capacity for flying, horses for drawing, and wild beasts their untamableness, so is the faculty of thinking peculiar to man.

Although one man may possess more capacity than another, yet none can be found who can not by education be improved at all.

Intellectual monsters are as rare as corporeal ones.

Therefore, parents can not give enough care to the education of their children; nor be careful enough to provide them with nurses whose morals are not corrupted. QUINTILIAN.

The young should be accustomed to obedience, in order that they may find it easy to obey reason.

They should be led in the best pathway of life; and the habit will soon become pleasant to them. PYTHAGORAS.

Private and public instruction should be connected, as far as possible, in order to join their advantages and to prevent their disadvantages.

Where this is impracticable, the light of a good school is always better than the dark prison of a home education; for the moral character is there in much less danger than with bad domestic tutors, and in an impure and narrow family life. The best teacher experiences a higher sense of his vocation with a greater number of scholars; and one scholar stimulates another; advantages which far outweigh the exclusive devotion of a teacher to a few scholars. QUINTILIAN.

Man should raise himself, by instruction, to a state pleasing to God, and of true freedom; and to a condition of mind desiring only what is good.

The truly educated man enjoys the most beautiful and delightful results; passionlessness, fearlessness, freedom.

Those who have enjoyed education and instruction, are truly free.

EPICETUS.

To establish the reason as the universal governing power, is the purpose of true education.

For real human life consists in this : to govern all the actions according to reasoning insight, so that our nature shall come into a course of life accordant with reason, which is given us as a guide to virtue.

The highest good and happiness consists in virtue ; the greatest evil in the want of it.

The Stoics.

Every one must be brought up, as far as possible, according to his character.

Not, that is, according to its faults, but according to the noble qualities of it.

We ought in no respect to contend against nature.

Each one ought to develop his own peculiar traits (not being vicious) ; and not to endeavor after such as are foreign to him.

His own peculiar characteristics are best suited to every man ; but he must be a strict judge of his own traits and failings.

Especially, endeavors should be made, not so much to acquire qualities which nature has not granted, as rather, to be rid of the faults which each of us is subject to.

CICERO.

The ancients educated their children not merely by talking to them, but also, and especially, by means of examples and actions ; in order that what they acquired might remain in their minds not as a science, but as a nature and custom inseparable from them ; not as a thing learned, but as an inherited possession.

When during a consultation on this point one asked Agesilaus, What children should be taught ? he answered, What they will have to do when they become men.

MONTAIGNE.

Although man is by nature a domesticated being, it is only by education that he becomes the best of all created beings on earth, and the nearest to God.

But if he grows up without education, or with only a poor one, he becomes the wildest of all the creatures which the earth produces.

PLATO.

Man is an excellent being, if he is truly a man.

ÆSCHYLUS.

Reason and understanding are, in man, the object of nature.

To this end must be directed the originating of man, and the establishment of his habits.

Further ; as the body and the soul are two distinct powers, so has the soul itself two parts.

One of these possess reason ; the other none.

Each of these two parts has its own faculties ; one, those of the instincts ; the other, that of thinking.

As the body precedes the soul in the order of time, so does the unreasoning part of the soul precede the reasoning part.

This is easily to be seen, in that anger, obstinacy, and passion, are exhibited by a child as soon as he comes into the world ; but reasoning, and the capacity of thought come with time.

Therefore men must care for the body earlier than for the mind, and next for the passions ; for the latter on account of the reason, and for the former on account of the soul.

ARISTOTLE.

I perceive that you bring up your children quite too tenderly.

Your desire is, to be a good mother.

But, my friend, the first duty of a good mother is, not so much to see that you secure to your children proper susceptibilities, as to accustom them as early as possible to what is the basis of every virtue; to moderation, and the control of their animal instincts.

You must also beware lest instead of a tender mother, you play the part of a flatterer.

Children who are brought up delicately from their earliest youth, must necessarily be unable to resist the impulse of their instincts, which is always so powerful.

It is therefore your duty, my love, to educate your children so that their nature shall not receive any wrong direction. This latter happens when the love of pleasure gains the control of their minds, and when their bodies are accustomed always to require pleasant sensations; so that the latter become feeble and excitable and the former disinclined to all labor and exertion.

Therefore nothing is more necessary than that we should exercise our pupils most, in what they dislike most; although they make sad faces at it and are made unhappy.

There is no surer means of causing them, instead of becoming slaves to their passions and thereby disinclined to labor, and controlled by their animal impulses, to acquire an early respect for what is beautiful and noble, and to enjoy themselves in this, instead of the former.

THEANO, the wife of Pythagoras.

"The man who knows himself," says Cicero, "will find in himself traces of the divine; and by conducting as a representation of the divine, will avoid experiencing or doing any thing which may shame this great gift of God.

"When he has thoroughly investigated and rigorously proved himself, he will become aware with what high endowments nature ushers him into life, and how many means he possesses of attaining wisdom.

"Man stands in the world with endowments of mind and soul which, although they rest as it were under a veil, will still in the end, when he shall have made use of their full strength, at the same time keeping wisdom near him as a guide, raise him to the condition of a good and therefore of a happy man.

To bring man to the attainment of this end by instruction and education, is the high task of the educator's art. No other or loftier purpose can be set before him, than to develop the natural man into an intellectual and moral man.

For, this purpose is the promotion of human dignity and the bettering of human destiny and human dignity of human nature; in which the voice of God speaks.

What offers to man a sure guide?

Wisdom only, and alone; a part of which it is, to preserve uncontaminated and uninjured, the inward genius. *M. AURELIUS ANTONINUS.*

We should not only be willing to be of service to the young, but should also not vex them, either by words or actions; but use the best means of teaching them to pray, to be orderly, moderate, obedient, faithful, quiet and truthful; not to curse nor scold, and to keep themselves virtuous in words and gestures.

God's requirements from us are that we assiduously use all means of inducing and protecting the young, so that they shall not become fleshly, ill-nurtured, dissolute persons, as is very soon the case when they are not kept under careful discipline.

For our own experience shows us that youth are like tinder, and easily become too much excited by what is bad and wicked.

Children are put under a taskmaster, that he may instruct them, have care of them, and keep them confined as if in a prison.

But why, and how long?

Shall the severe discipline and confinement of the taskmaster, and this constraint and servitude of the children endure permanently?

By no means; it is to last only for a certain period; until the child is grown up.

This obedience, prison and discipline are for the best good of the child; that at the proper time he may become the master and inheritor of his property, and may rightfully use it.

For it is not at all the intention and will of the father of the child, that his child shall always remain under the taskmaster, and be always corrected with the rod, but his intention is that by means of the instruction and discipline of the taskmaster he may become more fit to manage his inheritance, when he is grown up.

If a respectable man should all his life do no other good thing than only to bring up his child aright in the fear of God, it is my opinion that he would have done enough for him, even if he should never go to St. James' or to Rome.

The greatest work you can do is, to bring up your child aright.

I do not mean that you ought to begin by seeing that he is silent in the stable, but by seeing that he does not learn to curse and to scold.

Let people say, if they will, that children learn cursing and vices before they know what they are.

We should bring up our children to learn God's word, to know God, to fear him and to believe in him; for a father should be the bishop and pastor of his own house; since the same office belongs to him over his own children and family, that a bishop has over his people.

Are we not fools? For we can make heaven and hell serviceable to our children, and still pay no attention to it.

For how does it help you if you are never so pious for yourself, but are neglectful of the bringing up of your children?

The true family worship is to educate your children well.

Otherwise, we go up to the temple, and sacrifice to God, blindly, like the Jews.

Those persons ruin their children, who knowingly neglect them, and let them grow up without instruction and discipline in the Lord.

LUTHER.

Most teachers sow plants instead of seeds; do not proceed from the most simple principles.

First, the senses should be exercised; then the memory, then the understanding, and lastly, the judgment; and all by commencing as science does, with an induction.

The pupil should learn nothing by rote which he has not already comprehended.

He should learn nothing which is not useful either for one or another condition in life.

All the studies must form one whole; must proceed from one root.

Pupils should learn, not only to understand, but also to express what they understand.

Speech, and knowledge of things, must proceed together.

Reading and writing should be learned together.

Actual intuition of things is the most important part of instruction.

From this proceeds actual knowledge; what is perceived by the senses clings fastest in the memory; for which reason pictures are to be recommended.

Every art is learned by practice. The teacher must do the work before the scholar does it.

COMENIUS.

The best mode is to make the children learn the most useful things.

Learning is only an ornament.

Therefore the child himself must learn to form opinions ; to which end instruction should often be given orally.

Justice and desire for knowledge must be planted in the child ; he must likewise be early instructed in morality ; which represents virtue in a lovely form.

The actions of a young person constitute the truest touchstone of what he has learned.

MONTAIGNE.

Few rules should be given to children ; but these should be strictly adhered to.

It is best that rules should be found out by the practice of them.

Children should be managed with kindness and suitably to their character.

We should watch against all affectation in children, and should keep them natural, and preserve the beauty of their character.

For your children especially, what they learn should not be made a burden.

Children should not be overburdened with plays ; the best are those they contrive themselves.

Children's lessons should not be made a servile labor to them.

Even their sports would become disgusting to them if they were forced to them.

Children should be influenced to love to learn, and should only be made to work when they are inclined to.

Still, children should not be permitted to be idle ; and must be accustomed to drop occupations which are pleasant to them, to take up others not so agreeable.

LOCKE.

Precocious boys and youths may fancy they are doing a good thing, when, at a time when those of their own age are enjoying themselves with really childish occupations, they are, as it were, acting a part in the society of adults, are treated by them as equals, participate in their equivocal and often immoral amusements, make a figure in the eyes of vain girls and frivolous women, actually enter into a lover's relations with them, and altogether conduct themselves as if they had long outgrown the children's school, and attained to the condition of young men, who are beginning, after their fashion, to enjoy the life of the great and polished world.

But they are not conscious how indescribably repulsive this unnatural amphibious standing makes them to all men of correct feeling and understanding ; and how far they are inferior to those boys and youths who preserve their gay free and innocent state of mind with which nature has endowed them, and which affords them a pleasurable relaxation from their hours of labor ; who preserve the character of pure youthfulness.

What would the ancient Greeks or Romans say, to see our youths and boys, at an age when they ought to be enjoying themselves with their companions, appearing in the guise of a modern dandy, flitting from one gay ball to another, regularly attending the theatre, playing the squire of dames or the tender shepherd at tea-parties, introducing and singing the newest opera airs, and busied with all the little and pitiful affairs which the highest taste of the cultivated and modish world finds so beautiful, delightful and magnificent ?

The youth precociously trained has no youth ; and when he becomes a man, no pleasure and no amusement.

We must declare that all those fathers and mothers are deluded, who,

as is unfortunately so often the case, are not as zealous about anything else as they are in using every possible means to make their sons, in their earliest youth, half-men-of-society. KOHR.

As with plants, neglect or care in their tender youth contributes principally to their decay or flourishing; and as the immeasurable growth of the Roman Empire was justly ascribed to the courage and wisdom of those six kings who governed and protected its childhood, so, without doubt, the training and education of boyhood, and even at an earlier age, even if it is unobserved, and is noticed by no one, have an influence not equalled by the most persevering and assiduous industry in after years.

BACON.

To care for their children so that they may secure in this world a good bringing up, gold and wealth, and honor, is in this life almost the whole object of parents.

But for what is truly good; for virtue, goodness, honor of God; and by good instruction to bring ignorant youth early to this possession of a cultivated mind—these are very little thought of.

To inherit mere treasures and riches is not always good. Often a young man comes thereby to destruction. To be rich without good discipline will bring but little prosperity.

Better things are offered thee. Therefore is it that thou, high-minded father, dost seek for the health and peace of thy children in far other ways. Thy efforts are directed to secure what is really useful for them.

Your faithful commands and tireless industry shows them how to preserve themselves from unhappiness; and your always wise instruction retain them in the right path of duty.

Under the influence of such instruction, their souls and bodies will prosper. And such care on the part of parents will do still more good. The stream whose fountain rises with so much profit within your house, will flow out of it, doing good as it goes. SCHNEUBER. (*Poem.*)

There has been no period without persons entertaining the delusion that knowledge and education are to be considered the source of all evils. There was even a time when Rousseau, the corypheus of this class, was worshipped; Rousseau, who with deceptive and glittering eloquence, maintained that virtue had departed in proportion as the sun of enlightenment had risen above the horizon, and that with philosophers and artists, luxury and vices had come in; the sciences and arts, growing out of vices, astronomy from superstition, eloquence from ambition, hatred or flattery, geometry from avarice, physics from curiosity, morals from pride—these have enticed the human race out of their happy natural condition, and betrayed them into the depths of their present misery.

But aside from the fact that the realms of science and arts will as little be injured by this sort of declamation, as the rage of atheism has availed to overturn the everlasting pillars of religion in the human soul, it does not require long reflection to comprehend that Rousseau and his associates are viewing entirely and only from the misuse of the sciences and arts, not from the right use of them, and blaming the latter for what can only be charged against the former; in a word, that they are, as the proverb says, throwing away the child and the bathing-tub together.

And thus will it be to the end of time, even though whole armies of Rousseaus, like Vandals, should overrun Europe.

With unworthy teachers and pupils, science and education will bring harm and destruction, like a sword in the hands of an unskillful man; but under the charge of a truly wise man, they bring endless blessings.

But just as certainly as man was created, not to crawl on all fours in the depths of primeval forests, but to develop his mental and moral faculties,

as plants are organized to bloom and bear fruit, just so certainly he needs education, and only by means of it will become what he ought to become, man, in the highest sense of the word.

Where error is prevailing, I will shed the light of truth; where burdens are growing wearisome, I will inspire renewed strength; and by words and by poems, I will consecrate my brethren to a free humanity.

Though deceit and delusion fill the air with darkness, soon will the clouds of night scatter away into silvery stripes, like vapor. God did not give thee in vain the spirit of a nobler life. Go, and shine, whither he calls thee.

Voss. (*Poem.*)

What can be baser for the human race than like the Sultan Ibrahim, to be condemned to eternal childhood?

But this is the equivalent of completely extirpating all morality.

Author of "Philosophie de la nature."

Enlightenment is the progress of man out of his self-incurred minority.

Minority is the lack of the power of using one's own understanding without the guidance of another.

KANT.

The substance of enlightenment—that which is made the subject of it—what must be conceived under the form of it—is included in the three great questions: What must I do to become what as a purely intellectual being I ought to become, and what as a purely experimental being, I must become? What ought I to do? What can I hope for?

This is the center and focus of all proper and real enlightenment; to which are and must be related all material which may accidentally become the subject of enlightenment.

This true enlightenment is characterized by the fact that all other knowledge and thought is, as means, positively or negatively subordinated to it, as to a compend of all truth which is worthy of being known, which is interwoven with the essential being and the real purpose of humanity, and which is immediately interesting.

These three great questions, which comprehend the one great sacred principle of humanity, and the clear answer to which will bring out clearly the consciousness of the idea of the one principle, so that the will which can comprehend only what is thus grasped by the consciousness, can comprehend it and govern itself by it,—these three questions have no other purpose than harmony of thought, for the sake of rendering possible a will in harmony with itself and with the whole world of reasoning minds.

He who has once listened to this music of the spheres—which however is only heard by the ear of the moral nature—has raised himself to the level of humanity; and belongs among the elect, who do not vainly wear the human shape.

GREILING.

The true victories, the only ones which we need never lament, are those won over the dominion of ignorance.

The employment most honorable, and most profitable to the people, is to labor for the diffusion and extension of the ideas of men.

NAPOLEON BONAPARTE.

Training, cultivation and enlightenment are modifications of social life; results of the industry and efforts of men towards improving their social condition.

MENDELSSOHN.

Man becomes greater in proportion as he learns to know himself and his powers.

If man possesses the consciousness of what he is, he will soon also learn what he ought to be; let him have a theoretical respect for himself, and a practical will soon follow.

It is vain to expect great progress from the good tendencies of man; for in order to become better he must already be good. For this same reason, the revolution in man must proceed from the theoretical consciousness of his being; he must be theoretically good, in order to be practically so; and the surest preparation for a course of action consistent with itself is the theoretical conviction that the essential part of man exists only in unity and through unity.

For man, having once reached this conviction, will also see that unity in will and action must be as natural and necessary to him as the maintenance of his existence.

And from this, he will further observe, that unity in will and action are as natural to him as the mechanism of his body, and the unity of his consciousness.

SCHELLING.

True enlightenment is characterized, not so much by extended knowledge and insight, as by correct estimation and valuation of all that men know and undertake; by the correct reference of all things to their purposes, and ultimately to the highest destiny of humanity; and lastly, and especially, by man's endeavor to free himself, in opinion and action, from the influence and absolute authority of all other men, and of his own previous opinions.

Enlightenment itself, or the efforts which the enlightened person makes, not only to diffuse his own views and to relieve other men from the errors which he feels himself free from, but also to awake in others an independent and free activity of thought and action, and to render them capable of and inclined to the investigation of truth and the renunciation of prejudice:—this pursuit can be successfully followed only by one who is acquainted with the powers of the human mind, the natural course of its development, its inward and outward obstacles, and with the original and subsequent accidental connexions between the impulses of the heart and the tendencies of the tastes, on one hand, and the procedure of the thinking part of our nature on the other.

Aside from these views and convictions, nothing can result from enlightenment, except what has too often been in operation: a rebellious attack upon the same freedom of opinion which man ought to possess for himself and to allow or restore, without limitation, to others;—a well-meant despotism over the intellects and opinions of others;—an unnatural pouring in of new knowledge with the existing mass which has no related and connecting materials in it; an operation of which the best result must be the rejection by the latter of the new addition, whose conjunction, if enforced, would break up all connection, and all that beneficial union which gives to our knowledge its principle value and interest.

C. C. E. SCHMID.

The chief problem of education must be, not only to communicate to youth in an intelligible manner the sum of what man as man needs to know, but also to develop harmoniously and naturally the various faculties of the soul, so that the pupil himself shall learn how to investigate further after truth, and shall choose for his guides in life, the noble and most elevated ideas of the true, the beautiful and the holy; and lastly, that by gradual accustoming, in earnestness mingled with love, he may be led in the road of right, morality, religion and virtue.

True enlightenment consists in this; that man rightly comprehend his moral destiny, always have it before his eyes, refer to it all the manifold phenomena within and without him, and observe everything from its proper point of view.

HEYDENREICH.

It is not merely true that all enlightenment of the understanding is valuable only so far as it reacts upon the character. It also proceeds, to

a certain extent, from the character; for the road to the head must pass through the heart.

Development of the susceptibilities is thus a pressing need of the age; not only because it is a means of rendering increased insight ^{efficiently} useful in actual life, but also because it stimulates to the improvement of insight. *SCHILLER.

We do not divert men from error merely by contradicting their foolish words, but by dissolving out of them the spirit of their errors.

It does not help one to see, to describe to him the night, and its dark colors and shadows. We can show what the night is only by lighting up; and what blindness is, by covering the eyes.

Just as little will one learn the right path to a place by being led about through all the side streets where he might go astray. PESTALOZZI.

Enlightenment in an empty heart is mere memorizing, however it may add to the acuteness of the mind. J. P. F. RICHTER.

Why can not law and a fixed order of each thing with all, complete what clear reason has begun?

One who doubts upon this point, must receive it as the first law of nature that the human race, sold under the dominion of evil, can not attain to any better condition; and that its clearest and surest principles must for ever remain false and delusive words.

But if this is not so; if infinite space has resolved itself into stars and suns; and chaos, under the laws of nature, has been reduced into a regular course, then let us, in this chaos of men on our earth, not doubt of the same desirable consummation, but rather, with good courage, contribute our utmost to bring it about.

Light is the quietest and strongest element in nature. By its rapid beams, by its direct, continued, noiseless action, it enlivens and purifies nature, wakes and paints the slumbering blossoms, or causes other colors to fade. It is the eternal agent of incessant creative power.

So should our efforts be for posterity; and all their reward, that by them, as by the absorbed rays of light, a new and beautiful creation shall arise. HERDER.

It is perhaps not hard to understand why so many persons prefer darkness to light; night to the brightness of day.

The fault may lie in the organization of their sensorium, which can not bear light.

Let the owl be asked whether day or night affords it the most pleasant sensations?

But there may be a fault on the part of the enlighteners themselves. They may disseminate harmful sparks of fire instead of the light of truth—may introduce more of corruption among men, than of moral improvement.

The visionary, the alchemist, the mystery-monger, as much think themselves enlightened, as other men think them fools, or what they are.

Enlightenment is recognition of truth, rejection of prejudice, delusion and superstition.

In order to diffuse enlightenment more generally, the intellectual faculties should first be as much as possible brought under good reputation; and instruction, encouragement to progress, and to the investigation of the truth, must be made universal.

Otherwise, there would never be more than a few enlightened persons; and there would be very many who would injure and persecute them.

WEIKARD.

As the sun is the central point of our planetary system, so that our earth,

as well as the other planets and their moons, circling round it, derive from it light and heat, so does reason, as the means of knowing the eternal and divine, and according to the same laws of nature, constitute the central point of all the other faculties of the mind and soul.

But if education, instead of improving, is not to be injurious, and is not to lead the pupils in paths of error—if instead of blessing it is not to bring only cursing and destruction, by skillfully perverting men from their proper course, it is necessary that the development of the reason should not only not be neglected, as is the custom especially in a period of partial enlightenment, but it ought to be managed with a special view of enabling each one of the faculties to be cultivated in the way that nature prescribes.

For this reason, religious and moral education, in which the reason perfects itself, unfolds its flowers, and bears its fruit, must be a permanent and principal department of it.

The conscience, whose power man feels even in the midst of the tumult of base passions, and knows that what he does is wrong, should receive early and solicitous care; in order that the soul may not deny its own pure nature, or its laws.

That susceptibility, which we denominate the conscience, is nothing but the complaining voice of the soul. It is the immortal part of man, speaking.

He only is truly free, who obeys this voice, the law of his soul, which can only desire what God wills.

ZSCHOKKE.

In truth, what more elevates the soul, or more encourages virtue, enlarges and refines the impulses of the heart, as lofty opinions of the object of our existence? The universe, unlimited; infinite space and time; the sun which shines upon us, a spark from some superior sun; our immortal soul, allied to immortals, and—if it obeys God, destined to God's happiness.

WIELAND.

If childhood is educated according to the measure of its powers, they will continually grow and increase; while if forced beyond their strength, they decrease, instead of increasing.

AUGUSTINE.

During the first seven years, the child is pure and simple, like soft wax.

With the departure of boyhood comes the period when the child takes up all manner of faults; partly from his own tendencies, partly from his imitation of the evil which he sees. As the body grows, the mind increases along with it, and the secret feelings burst into flame.

Deficiencies in true education are the source of delusion and of all transgressions; the chief cause of violations of the laws of the mind.

In order that the invisible mind may be the dwelling of the invisible God, the characteristic endowments of men are in the need of instruction.

PHILO.

The design of education, is, in one hand, the development of what, though undeveloped, is capable of development, from dependence to independence; and on the other hand, likeness to God; that is, harmony; health of the bodily and spiritual organism, so that it shall enjoy the utmost sense of life and activity of which its organization renders it capable; that all the functions of the corporeal life shall be harmoniously active; that the mind shall also be harmonious; to the end that in thought truth, in will freedom, in feeling love, shall be the star and center of life.

But the character also has its needs.

He who undertakes to educate it, must himself love freedom; for he is to educate free men.

Freedom from passions and desires, from prejudice and superstition, that freedom which finds its life and essence in law and in self-denial,

that freedom which knows that man has within himself the source of his pain and pleasure, and that he only is free who frees himself—is the first requisite of a teacher.

KARL SCHMIDT.

Man takes his place upon the scene of life, provided with bodily and mental endowments such as no other being has, that we know.

All that he can become appears as a seed which awaits its development; a flower from which the fruit will be developed, and under favorable circumstances will ripen.

As in other organized beings, this development and training partly, follow unvarying natural laws without needing any help from without.

The body grows, its members enlarge and become useful. Manifold impulses appear. The senses receive impressions from the outer world. The reason becomes active, and even in its most imperfect manifestation gives a character which distinguishes man from the animal creation, not merely in degree, but in kind.

But, unlike animals, man has more need of foreign aid, from the moment of birth to the period of childhood and youth.

This aid must supply the place of the instinct of animals, and of the services which he afterwards receives from the free activity of his matured reason.

Without constant care and protection, the body, which man has in common with beasts, is in constant danger of injury or death.

Without the aid of other reasoning beings, that quality which distinguishes him from the unreasoning, can never approach that grade of completeness which its original perfectibility will admit; and the highest of its endowments, the reason, which is founded upon independent action, would, though it might attain to some strength, with difficulty attain to that fixed grade of elevation in which only it can appear as entirely perfected.

Without instruction from others the mind can acquire by its own observations upon the external world, some inconsiderable store of knowledge; but it would both gain this slowly, and would fail to gain a great additional mass.

Therefore, man needs education and instruction.

NIEMEYER.

Training is, developing according to an idea.

Nature trains, because she develops. Art trains the material which it derives from nature.

The training of a faculty takes place, so far as man can perfect that faculty; but this is possible only in proportion as it is strengthened.

To cause a faculty to need an increasing amount of stimulus to activity, is to weaken or to blunt it. The common induration of the faculties is nothing else.

The faculties are strengthened, as they are made more capable of stimulation; they are weakened, in like manner, when their activity is not sufficiently excited. This is pampering or weakening them.

The perfection of a faculty as to its original nature, in the progress of its existence, consists in its elevation; as to its development, in its strength.

Since the mind of man is destined to endless development, it must in like manner develop its individuality also.

Human development appears as a progress from an undistinguished condition; as the gradual assumption of more and more distinctness of character and form, and movement from chaos into self-consciousness.

The more virtue there is in man, from childhood upwards, the more does he long after development and cultivation.

The training of every man therefore presupposes faculties and virtue; and endeavors to develop them as far as possible.

Not to train a child is, to permit the noblest plant in the garden of God to languish.

The training of men must elevate their minds.

Training makes men free, and universalizes them; for it requires a complete development.

Lack of training is ignorance; the activity of the faculties without training, is savageness.

If the training leads to variations from the original pattern, that is, from nature, it becomes mis-education.

If the course of training outruns the development, so that the powers are overtasked, this is over-education.

The same term is applicable when the training transcends the appropriate sphere of the man.

Education which is imperfect, and without any plan, is nearly related to the same.

SCHWARZ.

The purpose of true education can only be, the development of the bodily and intellectual man, so that each of his faculties may reach its highest development, in the utmost possible harmony with all of them, and that the reason may guide them all.

What man needs, as a man and a citizen, every one, in every situation, can attain for himself. In the pursuit of this object which does not admit of distinct statement—reason's ideal of a perfect man will serve a measure of attainment.

Maintaining the health of the body; training its powers; developing and sharpening the natural understanding; enlightening ideas relative to man and the world; instructing and elevating the imagination, the sense of the beautiful, the noble, the great, the affecting, the refined, the pleasing; harmony of the bodily desires, and subjection of them to the moral laws of the reason; moderation in the enjoyment of the good things of life, and equanimity in the want of them; reference of all earthly being and action to the other side the grave; a scene, it is true, unknown, but the idea of which must express a harmony with the purposes of the moral law, and of a living, reasoning being; these are the objects which every man should seek to secure for himself, and can so secure, if he resolves to do so, and if no insuperable physical and moral obstacles intervene.

While man is thus learning and practicing the special trade, art or science, which is to fit him for his duties as a citizen, still he ought not to forget the ideal which should always be before him, but should be mindful of the symmetrical development of his whole nature, with a view of his higher destiny.

From the neglect of men to train themselves in this manner to true humanity, and to carry it to a continually greater perfection, arise far the greater part of those evils which oppress our polished civil life. This is the source of intellectual over-exertion, which ruins the body, with all its sad consequences, of lawless wanderings of imagination, of enervation and weakness from excess of animal enjoyments, of wild egoism, which destroys all happiness, of anarchic tendencies, and even of devilish wickedness though accompanied by high intellectual cultivation.

To so ill balanced a training as this the condition of beasts, which Rousseau prefers to it, is indisputably preferable to it.

THE AUTHOR OF *The Impulse of Reason*.

But few persons have the talent and good fortune to be able to become, like Pascal's father, the teacher of their children.

But the child should not too easily be dismissed from his home; for there is best developed his own proper family individuality, which he can not lose without injury to his moral character; and his removal from the

midst of his family circle at an early age often estranges him from father, mother, brothers and sisters, for life.

But although public instruction is usually to be preferred to private as being better by its nature, still, as each has its peculiar disadvantages, the change from the latter to the former must be prepared for; and every educated father should retain the right of protecting his child against pedagogical injustice, and of watching over and directing his progress.

VON AMMON.

One of the most destructive errors in education is the idle vanity, that looks for everything before its time, and will have fruit before flowers; in order to enjoy the astonishment of the guests at seeing the table adorned with the evidences of summer, when the earth without is covered with snow and ice.

Such things always are pleasing to the eye, even when their growth is not natural. A precocious child, however, seldom grows up into a valuable man.

It is true that nature, who leaves nothing unattempted, sometimes forms men in whom, as in the gardens of Alcinous, buds, blossoms and leaves grow together on the same branches, outstripping the year and the seasons; but to endeavor to imitate by art what happens as by a miracle, sometimes, and seldom enough, is not only folly, but a sin against the laws of nature.

The appearance of universal attainments can in our times be had very cheaply.

Wisdom stands in the market place, with all her wares; and even from what she drops out of her lap, can a right beautiful child's garden be adorned.

This is as pleasant as it is easy; and it may perhaps be forgiven to the vanity of a mother, that she takes so much pride in her little angel adorned with learned spangles, without reflecting that the jeweled ornaments which the morning flings on the grass in the meadow glitter still more brightly, and yet disappear so soon.

The father, who ought better to know this, can not so easily be forgiven.

Fathers may also be met on every street who, because the laurel wreaths do not early fall on the brows of their sons, torture them with a thorny crown of bitter reproaches.

This is not love; it is the vanity of the carver who ascribes the bending of the knee before the image which he has well or ill carved and painted, to himself and his art.

But this is a serious matter. Knowledge is no doubt good, always useful, and in a thousand ways necessary. It is not however the first thing in education, but the second and third.

The first thing is the capacity of the pupil, in all its relations; and all knowing and learning, whatever its design, must in education be first referred to this capacity.

Any one who has been educated much in appearance, and lacks capacity, however good his other qualities, can not be on good terms with himself.

The most modest persons are found among those who possess thorough knowledge; the vanity among those who, being unacquainted with the extent of their department of learning, believe themselves as it were, sovereigns of all of it, because, like the ancient navigators, they have set up their arms upon the shore.

FR. JACOBS.

The being of man depends upon the intelligent essence which proceeds from the primal life, or God; and, like God himself, has for its destiny

only its self-determined object, viz., the task of portraying that primal life; of reproducing the image of God, by thought and action.

Therefore must man be educated towards a divine rather than an animal character; and the future man should be so guided and supported by the man already mature as that he may be enabled himself to attain the same maturity, and may himself conduct his own life towards its destiny.

Accordingly, the child's inborn tendency to activity must be stimulated, trained and made a pleasure; he must be taught independent action, his mind must be trained, and the feelings of justice and benevolence implanted in him.

This process must be assisted not by habit merely, but by instruction also; which is, the diligent endeavor so to guide one who is yet uneducated, that he shall be able to acquire independently for himself such knowledge as he lacks; so that he may perfect himself in the right course, not by means of instinct, but consciously.

GRASER.

Pedagogy is the art of rendering men moral, in such a way that, taking them to be natural men, they shall be able to point out for themselves the way to be regenerated, and thus to change their first nature into a second, an intellectual one, in such a manner that this second shall become habitual.

This is the most important task of education, to eradicate the characteristic ideas, thoughts and reflections of youth, so far as they are capable of such; since the thoughts, like the will, ought to begin with obedience.

HEGEL.

Man is wonderful, placed on the dividing line between two worlds.

Belonging, through his senses, to the world of phenomena, he wanders with the beasts, weaker than most of them, helpless and without any guiding instinct; while that within him which thinks, which governs him, is able, when a time comes for despising every earthly good, and even for holding life itself worthless, to lift him beyond the sphere of the world of the senses, and to secure him a place in the divine world, as his proper home.

These two natures,—one full of unbounded pretensions, which it is every moment vigorously putting forward, and the other endowed with unbending dignity,—seem paired in an incompatible manner; and from the moment of their connection, the sentence of a strife as unrighteous as irreconcilable, seems pronounced against them.

Yes, nature, which called a world out of chaos, and has composed into unity the most heterogeneous elements, has contemplated a similar union in man, and has, in him, not forcibly chained together, but married, the most opposite traits.

When, by means of freedom, these elements approach each other, when the impulses of the mortal nature are cleansed and purified in the beams of the divine part, when the divine nature, without derogation from its dignity, clothes itself with the mortal part, and thus appears as love, no longer commanding by terror, but pleasing by mildness and earnestness, then there appears a complete and enrapturing harmony, of which every other union of the material and spiritual seems only a repetition or reflection.

At the highest point of this union, humanity results.

The free union of the divine and the earthly, the free coincidence of the desires and impulses with the law-regulated requirements of the reason, the appearance of the divine dignity in the guise of the noble and elevated—this is the loftiest triumph of man; and the purpose of these efforts is to bring about precisely that ameliorated condition of humanity, in which the strife of the discordant elements is appeased.

To train up youth in the best manner, is to train them to manhood—to humanity.

FR. JACOBS.

If education had always proposed to itself the noblest task, it would find none nobler than to assist in so developing all the powers of man, that they shall be most useful in the service of virtue, or most capable of moral uses.

NIEMEYER.

I term an education ignoble, in proportion as it interferes with the dignity of man.

Instead of training men for themselves, they are too often educated only for others, for the state, or even for some particular design, profitable to their family.

Instead of guiding them to wisdom, they are taught in the school of shrewdness.

Instead of training them in a moral prudence adapted to practical life, more concern is often shown to secure them skill in pursuits often superfluous, and which can be of service only for accidental purposes and in certain relations.

C. C. E. SCHMIDT.

Man is not clay, which the educator or the moralist can model at his pleasure, but a plant, having its individual nature and form, and capable only of being cared for by him as by a gardener, raised up to its full growth, and brought to its greatest possible perfection.

The educator will never try to make a wild apple-tree bear a peach, but will try to make it bear sweet apples.

GARY.

If the future man, whose mind, at his birth, appears entirely absorbed in his body, should remain entirely and exclusively under the influences about him, he could and would only become a natural being, without becoming a reasoning one.

His destiny, however, is within the realm of spirits; whose citizen he is to become.

Man can only develop into an intellectual being, when the predominating power of nature is broken down, and forced to employ itself in the service of the mind.

This can happen only by means of the operation of the mind itself.

Only by the influence of intellectual powers, can the seeds which lie within human nature be stimulated to their higher development and unfolding.

The mind is the real I in man, and the mental nature his essential nature. The body is only a temporary organ, vivified and upheld by the mind, and without it, falling into dust.

As the child can only become a man by being among men, so it is only by means of men, that is, by means of the intentional co-operation of other men, that it can become a man in the right way and at the right time.

Otherwise, his training would be left to chance; and a long time would pass before the child would attain to the grade of independence; in many cases, also, the mental influence from social life would not be strong enough to counterbalance the overpowering influence of nature in the child.

It is only by the intentional co-operation of educated men that the power of the mind can be so strengthened as at the right time and to the proper extent to overpower the forces of nature, and to subject them to itself.

This intentional co-operation is called education.

It is education which affords the means of progress from a condition of merely sensuous activity to one of higher intellectual life; since upon

it the immature man depends for both capacity and tendency to attain to his destiny.

But since, as was observed, it is the power of the mind over the animal nature which alone causes education to be efficient, it is evident that the more perfect the mind, and the more it resembles the divine mind, so much the more perfect and efficient will education be.

The mind which generally prevails in the world of men often claims to be the universal mind; and the reason of some individual is not seldom assumed to be entitled to authority.

This interferes with the universal mind; and thus arise numerous errors, which continually produce new errors, and throw men into sins and destruction.

GRAFE.

Why is man cursed in so many ways? Why must so many special means be used for cultivating the intuition, the reflective powers, the memory, the feelings, and the heart, partly by special teachers, and partly by means of different subjects of instruction?

Can not instruction in mathematics at the same time cultivate the sense of beauty and of order, of law, and of cause and effect?

Socrates was not the nurse, as he called himself, but the mother, of his disciples.

The longer the child is fed on milk, the better and stronger he is.

As the body must be strengthened before bodily labor is commenced, so the mind must have grown before it may undertake the acquirement of art and of science.

EDWIN BAUER.

All education must be in accordance with nature.

But as the most prominent law of nature, and especially in human development, is that of unity in variety, so education must have reference to this law, and must endeavor to observe such unity in variety; so that the sphere may be its emblem.

For this is the presentation of variety in unity and the opposite.

Unity and variety, as perfectly united as possible, are what education should strive after.

True human training requires that man should be developed from within himself, in unity of mind and feeling; and thus should be educated to an independent and comprehensive display of this unity of mind and feelings, in order to complete self-knowledge.

Man should recognize the principle of unity in variety, and the converse.

He should recognize humanity in each man, and the man in humanity.

He should discover the external in the internal, and the internal in the external; the mind through the body, and the body through the mind.

The essence of education consists in this: that each department of human activity is developed in the individual; none of them isolatedly, but each in a harmonious relation to the others.

Therefore the school, and life, should each be treated as a unity; so that in education, the attention may be fixed on the future man, the father of a family, the citizen, the patriot.

FROEBEL.

I have always thought that a man improves the human race, by improving the young.

LEIBNITZ.

Heaven be thanked that it is a point of honor to care for schools!

For men without schools are men without humanity; like birds who can not fly, or fish who can not swim.

If each faculty needs training, although it must develop and ripen itself, in what other place must the intellectual powers be exercised?

But as much as a dollar is worth more than a penny, so much are the intellectual powers more valuable than the bodily.

The child must observe, and think, and learn to retain his thoughts in his memory; and this the school teaches.

He must continually be mindful of God and of his duty: and must cultivate his sense of the beautiful and lofty; and this the school causes.

He must accumulate and arrange human knowledge, express his thoughts by words, and make himself understood by others; which the school makes practicable.

It is the planting time for the whole life.

He who cares for the school, cares for the most important planting-time, not only for earth, but also for heaven.

TISCHER.

There are three kinds of bad schools: the antique-dogmatic, which merely teach to read the catechism, arithmetic, and writing; the merely instructive, which overload with undigested knowledge; and those which cultivate only the power of thought, and which thus cause ignorant disputatiousness.

GRASER.

The purpose of instruction and education is not a mere pretended enlightenment, but the illumination of the understanding; and not this alone, but also the utmost possible development, at the same time, of all the powers of the soul.

Mere enlightenment—which was, and not very long ago, the only object of education—is a training of the understanding at the expense of all the mind; and results in nothing except a chilly *aurora borealis*, without any real life.

The training of the whole intellectual man establishes over him and in him a sun which dispenses light, warmth and fruitfulness to all.

In the most prosperous period of Greece, almost every Greek was familiar with Homer.

We have Schiller, Goethe, Claudius, Uhland, Ruckert, and many other singers of the noblest grade.

Let us strive to make our people at least partly similar to the Greeks in their acquaintance with their poets.

The common school may be made to do much for this purpose. Time can not be wanting, when we can spend it in stuffing the heads of the children with the names of Asiatic mountains and Brazilian apes.

HARNISCH.

Nature furnishes milk as the first nutriment for man. It is also the best; as it contains everything necessary for nourishment and growth.

Notwithstanding its simplicity, it affords the child sugar (4), fat (8), casein (5), phosphate of lime (0.5), water (87); thus giving free nitrogen, or material for warmth (sugar and fat), nitrogen compounded, or material for making blood (casein), bone-making material (phosphate), and material for adding or dissolving (water.)

In like manner should man receive intellectual milk in his instruction; material at once simple and manifold, nutritious and well-flavored; strengthening to the mind, but in pleasant vessels; warming and refreshing; water, but not insipid; fresh milk, not stale nor sour.

That teacher is the best who can make milk of his knowledge. He will furnish to boys and youth everything their mental development requires.

EDUIN BAUER.

At the end of the fourteenth or fifteenth year, school instruction—public education—ought not to cease, but to continue, even if the number of hours is smaller.

A youth of fourteen is yet a child in insight and power, as in years.

Now is approaching the period most important for influencing him, and most dangerous. And is it then that we are to leave the youth to himself, to be corrupted by chance, or by the common affairs of life?

This would be—to speak mildly—foolish. It would be to begin, but not to finish.

Therefore, instruction, and the further exercising of the powers of the mind, should continue, the number of hours being diminished.

Now should be studied the most important subjects; theories of religion and morals, ethical principles and development of character, theory of the duties and rights of citizens, their relations to the authorities and to the state, general knowledge of the laws of the land, especially of the penal code.

This will accomplish much more than the studies hitherto pursued in schools or infant schools, the miserable practising of mechanical reading, writing, &c.

No one should be graduated from the institutions of public education and training, until he arrives at age.

DIESTERWEG.

What must be done in order to keep pace with the requirements of the progress of the age, which is all the time demanding additional studies for the young?

Shall all new studies be rejected, and only the few retained which the "good old times" admitted? Shall different studies be pursued together?

The former half-way method has seeds of death within it.

The spirit of a principle is never comprehended except by those who teach especially some one department; but who in practice connect the various departments in a truly economical manner.

And yet this condensation of knowledge is never a complete solution of the whole problem.

I know of but one key to it—the prolongation of the period of study.

If we are requiring of boys of sixteen what they might learn at fourteen, it is then only worth while to introduce more studies into the common-school course, and to endeavor to make an effective enlargement of it.

But the school should cautiously beware of making sacrifices to the arrogant requirements of the spirit of the age; which, whenever it takes a wrong direction, promotes nonsense, and desires to study by steam.

STOR.

The human mind is like a vessel which may be filled; and at the same time like a substance capable of combustion.

The teacher should act on both principles; should fill up, and set on fire; and will exemplify his mastery of his art chiefly by his division of his labor between these two departments, and by his adjustment of the proportion in which he endeavors to lead his pupils toward independent knowledge, from without, by learning, and from within, by thinking.

DOEDERLEIN.

It is not overloading with dead knowledge, but the purifying and strengthening of the moral feelings, which is the highest aim of education.

LUCIAN.

Education, with relation to men—for both animals and plants can be educated, and the word is derived from the latter—is the gradual change of the immature into the mature man.

This change happens, firstly, by means of the action of nature in the young man himself, impelling him, in body and mind, to the development of his powers; and in the second place through other men, with whom the young man stands in relations; by their constant influence upon him,

stimulating him to activity, and thus to the development of all his faculties.

Education by means of men is in part unintentional and purposeless, in part designed, and conducted according to certain rules, conceived with a consciousness more or less clear.

It is this latter to which particularly the name of education is applied; and it is this education which a man needs in order to be truly well-trained.

If all education were left to the operation of nature and of accident, men might, it is true, do well physically, but mentally would remain exceedingly undeveloped.

Education however must be natural; that is, must be adapted to the nature of man as a corporeal, reasoning and free being; and therefore must not be mechanical, merely directory or drilling, as with beasts, but reasonable and admitting of free activity, and neither pampering nor over refining.

Instruction is an important part of this education; inasmuch as it must itself communicate education; that is, must be stimulating, developing, and training, and must not merely hand over to the memory for safe keeping a multitude of words and facts.

Education begins with birth; and is therefore at the beginning, of course, merely physical or corporal; it soon however becomes moral and intellectual also—or, to speak generally, mental; for the mind of the child very soon becomes active; as soon as he answers to the smiles of his mother, and begins to stammer out words.

The mother is therefore the first and most natural teacher.

The father, however, and others who are round the child, partly involuntarily and partly voluntarily, take a part in it.

For this reason the first education must be domestic.

Public education takes place later; and partly continues the former, and partly supplies its deficiencies; especially for boys, who by virtue of their natural destiny enter so much more into public life than girls.

When the youth attains his majority, he becomes his own educator; although the external world continues to have an incessant influence upon him.

This stage of education continues until man, having become a more or less ripe fruit upon the stem of humanity, falls from it and sinks into his grave.

Krug.

Man consists of two opposite natures, neither of which should be sacrificed to the other, but which should live in harmony with each other.

The corporeal nature is not merely the unessential and refuse shell of the extra-corporeal; it is not merely the prison of the mind, worth no care or protection; but it is the material root of the spirit; the independent ground and basis from which the mental forces spring up and which secures them their efficiency.

In like manner, the intellectual nature is not the mere blossom and fruit of the body; it is a separate independent power, recognizing laws by the reason, and governing itself by the free force of the will; in a manner quite opposed to the nature of the corporeal life, which acts and produces without knowing or willing, under the laws of blind necessity.

As man is equally an animal and mental being, and can only attain to both the natural and intellectual purposes of his life, by living in a completely harmonious condition, therefore his whole education must bring about an equal development and improvement of the powers both of the body and the mind. Physical education and mental training must go

hand in hand, in order that neither may be carried to an extreme of irreparable injury to men in this life.

ROTTECK and WELCKER, *State Lexicon*.

It is worth more to be possessed of but few of the lessons of wisdom, but to apply these diligently, than to know many, but not to have them at hand.

The object of education is not external show and splendor, but inward development.

What is the use of a great number of books, when their possessor knows only their names?

An enormous mass of materials is not instructive to the learner, but discouraging.

It is better to study thoroughly a few good authors, than to wander about among many.

It is in the possession of the greatest idlers that we find the largest libraries—as ornaments to their walls.

From everything noble the mind receives seeds, which are vivified by admonition and instruction, as a light breath kindles up the spark in the ashes.

Youth will correct itself, under management and stimulus.

The powers of the mind are nourished by instruction, and increase, under its influence, in proportion as new ideas are added to those innate, and bad ideas are made better.

Short lessons, in sentences or verses, are of especial importance in education. They are instructive, in proportion as they awaken the attention, and stimulate the will.

Youth, moreover, ought not to pluck first in one place and then in another, nor to grasp too eagerly after everything at once.

We attain to the whole, through the parts.

The burden must be proportioned to the strength; and no greater ones laid on than the pupil can bear.

No greater tasks should be imposed on the pupils, than they can comprehend and master.

SENECA.

But how is it, that the most careful education often miscarries; that sometimes, even from the best families, there come individuals, if not worthless, at least of weak character; while very eminent men develop without any education at all, and accomplish everything for themselves?

The reasons for this state of things are:

1. The most careful instruction is not always the wisest; and the best intentioned parents often do the greatest harm by the means from which they expected the greatest good. For example; many sorts of religious instruction make the recipients irreligious; virtue always watched over does not maintain itself when not watched; strictness and kindness, both of which are indispensable in education, accomplish their purpose only when mingled in right proportions.

2. It is very commonly the case in families where education is carefully attended to, that there is a too great uniformity in the mode of managing the children, though the children may be of very various characters; and thus it follows that what helps one, harms another.

3. The education which the individual receives from his parents and instructors, as he grows up, is not the only influence at work upon him; and the influence of other persons, and of circumstances, is often only too great; and moreover it acts upon him from all sides; while education can operate only on one side.

4. The fact that eminent men have seemed to do everything for themselves, only shows that education given by other men is not the only influ-

ence which develops; and that some few—and the cases are very rare—have sufficient innate powers to penetrate through all obstacles; and that even in these cases we must not overlook the external circumstances in which they were placed, and which were perhaps precisely those best suited to them, and therefore best fitted to fill the place of the education—in the ordinary sense of the word—which they lacked.

5. While a few remarkable instances may be cited of men who have succeeded without education, we must, in order to correctness, take into account also the great number of those who have been entirely ruined by the want of a wise education.

6. It must also be remembered, that under the influence of a proper education, such men would not only have been still more accomplished, but that they would have escaped many dangers which have been very harmful to them, though perhaps also useful.

NIEMEYER.

There is, in the present organization of the world, but one single species of instruction which is applicable to all classes, and embraces all human relations—namely, religion.

This, being restricted to no particular period of life, not visibly interfering with the course of civil occupations, and governing and training the heart more than the head, and therefore, requiring no artificial preparation from its pupils, finds its operations no where limited.

It awakens and maintains the consciousness of an inner and higher existence, which no chains can reach and no oppression can subdue; and thus is the most efficient teacher of true freedom, and of the recognition of that only equality which sustains all the civic relations, and exists in the sentiments even of the poorest.

VON GENTZ.

You have everything, if you have citizens.

For the fatherland can not exist without virtue; and virtue can not exist without citizens.

But to train citizens is not the work of a day.

Men must become accustomed, even in childhood, to consider themselves only as individuals related to the State; and thus they will at last come to feel themselves parts of a whole; members of one fatherland.

It will afterwards be too late to change them, when once they have come under the dominion of the passions of that degraded and hateful mode of life which rejects virtue.

How shall love for the fatherland be developed, under the many passions which choke it up?

And when ambition, vanity and pleasure have once established themselves in a heart, how much of that heart will remain to be devoted to fellow-citizens?

French Encyclopædia.

Education and instruction are, according to the use of language, two different things; the former including the whole of physical, moral and intellectual development, but the latter applicable more properly to the training of the intellect.

Instruction must include everything which relates to the development and training of the man and the citizen.

Up to this time, in most countries, more has been done for knowledge and practical ability, than for faith and love; and of the two chief human feelings, far more regard has been paid to selfishness than to the moral sense.

Therefore it is that in politics equality is not maintained; because, with men of mere intellect, material forces govern, and the spiritual forces of justice and truth are subordinated; shrewdness and not right feeling being the ruling trait.

A man whose feelings are properly trained is always a good citizen, and under a free constitution will always both enjoy happiness and promote it in others.

We have enough of laws for men; now let us train some men for the laws.

ARETINUS.

Our children are by natural endowment reasonable and moral beings; and under our guidance and supervision must become men capable of self-government, and of making it their constant duty to act according to the action of their understandings and the principles of their reason.

To bring them up to this capacity is the aim of moral instruction.

When we have brought them to it, they will endeavor to keep themselves unspotted from the world, to lay out their own path in it, and not to fail of finding their happiness in it, in the way of uprightness.

BEDAY.

When any one undertakes to educate a child according to the rules of a true system of pedagogy, he must of course see that all mere imitation, and mere pouring in of knowledge and rules for life, are opposed to nature and to the object of education.

The ideal rule laid down by Rousseau, "Follow the indications of nature," must mean, if rightly interpreted, "Manage your child as a being whose independent existence will not receive an arbitrary direction, limitation or expansion from you, but who will lay out his own direction, and enlarge his own sphere of life, and who is to receive from you, or from the whole of nature without him, only assistance, preparation, and removal of obstructions.

O Pedagogy, how long wilt thou continue to darken wisdom with thy rules, leading-strings and machineries?

Why is it that in the sphere of humanity, so much is labored at, and so little is done?

Why do so many suns set without having given light?

Why do such masses of power disappear without leaving a trace of their operations?

And why do such numbers of men stand still like rows of stunted trees?

The reason is that the faculties are crippled when they first awaken; because man makes it his first business to fetter the impulse of development.

The chief principle of education should be, man must train himself; must develop himself. But other men, without him, can and should promote this self-training, by external influences.

As the physical man develops itself, but not without the preceding act of generation, so does the intellectual man also develop himself; but not without the influence of other intellectual beings without him.

And as the physical man is nourished by food furnished him by means of others external to himself, so is the intellectual man, by intellectual nutriment furnished to him.

PH. CHR. REINHARD.

That was a true and noble expression which was made use of by Scherer, Royal Bavarian Court Librarian, in his "Retrospect of the Twenty-five years' Reign of my King," when he said "What is the use of the wealth of materia's for thought and discussion, if the principal faculty—of action—is crippled? Or of talent and intellectual cultivation, when the heart is not attracted to what is great and noble? Or of the extermination of error, if faith is exterminated with it? It is not the Spirit of the Age, but the Pest of the Age—this half-knowledge and sciolism in all departments and of everything susceptible of thought—this concern and inter-

est with whatever is far off, and indifference to what is more useful—this escape of every one from his own proper sphere. If the state is to improve, it must be by the improvement of its single members; and this can take place only when a true popular education, based in the discipline of every home, shall act upon the special life of separate men and conditions; when the chasm between knowing and acting, between thought and will, between school and life, shall forever disappear; when the eternal holy life of morals and religion shall no more be an affair merely of the understanding; shall no longer be merely laid down, but acted out also;" &c.

In these words, Scherer expresses the truly great and holy idea of a further education of the people, beyond the narrow limits of the common school; of an education which does not rely upon the various limited and one-sided experiences of practical life, or upon chance, or the influence of a party seeking its own aggrandizement merely; but which would effect the necessary changes, and set forth the means by which may be secured the most truly comprehensive and profitable education as men, citizens and Christians; which shall be distinct from all false enlightenment, all hurtful illuminism, both in substance and form, and as extensive as the immovable limits of social condition and of vocation in life, shall permit.

Such a training, of which only the first foundation can be or is commonly laid, at home and at the common school, is not only the most undeniable right of every man in virtue of his destiny and dignity as man, but is becoming every year more absolutely necessary; we might even say every day; in proportion as it is daily more out of the question for any one, without intelligent comprehension and investigation of his business to meet the demands of the progress of general education. The time is already long past, when the mechanic could get well through the world with the ordinary technical knowledge which he gained in the workshop of any master, when the merchant needs nothing except the routine which he had mastered during his short stay behind an employer's counter, and when the farmer was certain of a quiet living if he knew how to plough and sow and was an able workman.

This time, of which so many speak as the golden age, is so long past, that now a carpenter, for instance, does work which used to require a cabinet-maker; and the cabinet-maker produces what would formerly have required an artist. This time is past and will never return; for every practical pursuit, even farming, is now a science, and every trade has its science.

But a really profound and thorough investigation, in the true sense of the words, into these various pursuits, a rational comprehension and pursuit of these separate trades, whatever their names, is only possible when attempted upon the basis of a higher general education. Without this foundation the fixed point is lacking from which it is necessary to proceed; without this foundation, the isolated pursuit of a single occupation can by necessity only result in producing a routinist instead of a man.

Thus we find, as the sacred requirement of morals and of all the conditions of our vocations in life, this continued education of all classes in city and country—an education, universal in scope, comprehensive and thorough.

It was not yesterday that this demand was first heard. Not to go back to a more ancient period, Christ, first of all, expressed this necessity, when as the messenger of God, he proposed for himself the great task of bringing the whole human race to a knowledge of the truth, and through truth to virtue; and through truth and virtue to the higher happiness destined for him.

(To be continued.)

III. DUTIES OF PARENTS AND TEACHERS.

THE child who has not left the tender embraces of its parents feels hunger and can procure for itself no nourishment; it feels cold and can not clothe itself.

But its father and mother are at hand.

They are attentive to its least cry; they watch the tones of its voice, and observe its complexion and color.

If it laughs, their hearts are full of pleasure; if it cries, they are grieved. If it tries to go, they follow its slightest motions; if it is sick, they have no rest.

They nourish the child and instruct it, until they have developed it into a man.

They trouble themselves in a hundred ways, only to care for the child and to ensure its success in life.

Oh, the virtue of a father and mother is truly infinite; it is like God himself.

An ancient Chinese emperor.

When once a female friend from Campania visited Cornelia, the mother of the Gracchi, and in the course of conversation, after an idle fashion, first showed her own rich ornaments, and then requested to see Cornelia's, the latter waited until her two blooming boys, Tiberius and Sempronius, came home from school, and then showed her friend the boys, saying "These are my jewels."

VALERIUS MAXIMUS.

An intelligent father must try to influence his son by good company, and must attend to this, as a chief department of education.

Example, knowledge of men, and admonition, are of prominent importance in education.

The father must so conduct toward the son that the latter shall be sensible of his father's love for him, and then give him more of his confidence than any other man.

As a father who is too strict destroys his son by bad management, so the father who manages him lovingly, and with wise consideration, will first reach his object.

Constraint makes the young obstinate and cunning, so that they deceive first their father and then more easily others.

A good son is obedient to his father out of respect and love, and follows his father's advice.

TERENCE.

It is the highest praise of a noble race, that even in the midst of great wealth they bring up their children to be noble men, a memorial of their family and of themselves.

PLAUTUS.

Children must needs complain of a wicked father, for it is through his means that they are despised.

BIBLE. JESUS the son of SIRACH.

Water-drops wear away stones, and iron is worn out by the hands. But the crooked timbers of a wagon wheel will never regain their natural condition, however much industry is expended on them.

A field good by nature grows wild by neglect; and the better it naturally is, so much the more unfruitful is it if allowed to remain uncultivated.

However rough and hard the ground may be, it will yet, when it has received the necessary cultivation, bear good fruit.

Do not trees by neglect grow crooked and unfruitful, but when properly tended, are they not made fit to bear fruit?

What body is so strong as not to become weakened by disorderly living; and what so weak that training will not strengthen it?

Are not horses, if well broken when colts, obedient to the rider, and those not broken, wild and hard mouthed?

Are not the wildest beasts tamable by assiduity?

Human character considered in this point of view, is a long-fixed habit. Just as it is necessary that the limbs of a child should have proper management even immediately after its birth, in order that they may grow properly, even so must the moral character, as long as the child is weak and tender, be trained, even from the earliest youth.

The souls of children are as wax, upon which, as with a seal, impressions of wisdom and virtue can easily be made; whereas afterwards, when they have become hardened, they can be erased only with difficulty, and in like manner all new ones are resisted.

Children should early be made to learn useful things.

As the vine-grower drives down stakes near the vines to support them, so must the teacher fasten good teaching and admonitions to children, if they are to possess a good moral character. And to this end children should have only such teachers as unite with a true morality, a rich store of knowledge and experience.

He who does otherwise, is like a sick man who neglects the real physician, but sends for a quack, who by ignorant treatment destroys his life; or like a merchant who turns away the most skillful captain, and employs the least skillful one instead.

A good education, including the proper instruction, is the first, middle and last means by which youth become virtuous; while all other good things, such as riches, high birth, beauty, &c., are in comparison with such an education not worth trying for.

Children must be protected from follies and from intercourse with bad men, and made accustomed to tell the truth; and never to forget that lying is a contemptible thing, and deserving of universal abhorrence.

When parents, from avarice or conscientiouslessness or ignorance or any other cause, neglect their children, the sad consequences which punish such conduct do not fail to follow.

When such sons grow up to be men, give themselves up to the most frightful vices, and squander all their goods, then, when it is too late, the parents who have ruined them, feel the deepest distress. PLUTARCH.

It is a natural impulse for parents to love their children and to be troubled when they are in trouble; as we see, even in the case of unreasoning beasts, that they will even give their lives for their children.

If one had twenty children, and among them all only one who was good and obedient, that father would feel towards that good child, precisely as he would if he had no others.

Father and mother are in a position similar to God's, as relates to their children; and the paternal feelings of God towards us are excellently represented in them.

But this ought married persons to know; that neither God, Christianity, or all the world, can impose upon them or their children any greater or more useful work, than that they should train up their children well.

This is the directest road to heaven.

And when parents do not industriously perform their duty, it is as unnatural a thing as for fire not to burn, or water not to wet.

And on the other hand, hell can not be more easily served, nor a more

shameful thing be done, than by the neglect of children by their parents, and their being permitted to curse and swear, learn shameful words and songs, and live according to their own wills.

LUTHER.

Parents are placed in their station by God, not merely to find their pleasure in their children, or to gratify their curiosity with them; and still less to drive them to anger and to provoke them with excessive punishment; but to bring them up in the nurture and admonition of the Lord.

In like manner as the labors of pious and God-fearing parents are certainly followed by a rich blessing—for pious children are a crown and honor to them, (Prov. xvii ; 6)—so, if parents will not exercise the proper care and pains, but let things go on as they will, do not train their children in the fear of God, but give them over to wickedness and corrupt them, then certainly will God's anger and all manner of curses be upon both parents and children. (Prov. x ; 1.)

LUTHER.

The home, the school and the church are the three chief pillars of education.

Therefore this must come to ruin, if one of these pillars is broken down; and most of all does a defect in the first of these corrupt children.

The impressions which the child receives at home, being the first, and enforced by the examples of the father and mother, are the most enduring.

The parents are the first and most influential instructors; and accordingly, most distinguished men have been so fortunate as to enjoy a good home training.

In the relations of the parents to the children, it is of the utmost consequence that, on the subject of education, father and mother should think in harmony.

To this result will contribute the earnestness and firmness of the father, the softness, warmth, patience, and at the same time the proper steady strictness, of the mother.

It is the intermingling of these traits which will complete the ideal of a home education, and is the foundation of happiness in the family.

Those to whom God has given the best gift which he can give to man—children—should find no place of amusement, gaming table, gay society, or theatrical exhibition, any more necessary to them than is the company of their children.

Absences from home should only be occasionally taken, as a necessary recreation and relief, to make them more capable of performing their home duty.

For there may be such a thing as an excess of self-devotion.

But this is exactly calculated to cripple the faculties which are indispensable to the fulfilment of the educational duties.

It admits of no doubt that the mother can do very much not only for the corporeal benefit, but also for the mental development, of her children, if she is an intelligent and true mother.

She usually has her children much about her in their early years; they depend chiefly upon her. She has their youthful minds entirely in her power.

She can therefore do much to direct aright the first development of their perceptions and of their reflective powers; to secure them an early acquaintance with language, the most important means of cultivating the understanding; and that even their little plays may have some reference to a higher purpose.

Even upon sons while growing up into young men—whom so many mothers, even of intelligence, consider as grown beyond their influence—they can have an influence in many ways beneficial.

NIEMEYER.

I hold it incontestable, that if the history of all those men were fully known, who have distinguished themselves for uprightness or virtue, it would be found that nine out of ten of them owed these good qualities to their mothers.

It is not now sufficiently understood, how important for the future life is an innocent and blameless youth; how almost all those who have enjoyed this advantage, have owed it to their mothers; and how universally the perfection and the good fortune of men is founded upon female intelligence and female virtue.

ISELIN.

Parents are under obligations to educate their children, because they are required to do so by the voice of nature, regard for their own happiness, and their obligations to society and to the divine organization of the human race.

This education differs from the instruction which the children receive from others; but for this latter they must be prepared in the bosom of the family, and brought up to it.

Parents can therefore not be permitted to neglect this physical, intellectual, and moral and religious training, any more than the furnishing of that civic education which only terminates at years of discretion and fitness for an independent employment.

VON AMMON.

He who can not perform the duties of a father, has no right to become a father.

Neither poverty, nor labor, nor regard for men, can excuse him from bringing up his children and from educating them himself.

I assure every one who has a heart, and who neglects these holy duties, that he will one day weep bitter tears over his fault, and will never escape remorse for it.

ROUSSEAU.

To neglect the education of children, not to do all that is possible for this holy purpose, so far as parents may be able, in their circumstances, not to secure them the best teachers, not to keep them regularly at school, not to instruct them personally as far as possible, not to protect them from vice and by good examples to encourage them to goodness, is worse than to expose young children; it is the murder of their immortal souls.

Children are the most lovely bond of marriage; the best wool on the sheep.

When Dr. Jonas hung up over the table a beautiful bough of cherries in memory of the creation, and praised the magnificence and goodness of God in such fruits, Dr. Martin Luther said:

Why do you not think likewise of your children, the fruit of your bodies, which are more valuable, and more beautiful and wonderful creatures of God, than whole trees full of fruit?

But men go their ways and think nothing of it; yea, are even blind and avaricious about such gifts; as very commonly happens, that people, when they have children, become more and more miserly, and pinch and rake and scrape, that they may leave them the more.

Do you not know that his own portion is set apart for every child even before he comes into the world, and what is to happen to him? And the proverb says, the more children, the better fortune.

Ah, dear Lord God! how great is the blindness and ignorance and villainess of a man who does not consider this, but who misuses the best and most valuable of God's gifts!

LUTHER.

There are no greater benefits than those which parents confer upon their children.

But just as the husbandman renders useless the seed which he has sown, if he gives it no further care, so all the parental care of their children's

bodies is in vain, if they confine their solicitude to the period of childhood, and do not bestow long-continued care upon them. SENECA.

Thy wife shall be as a fruitful vine by the sides of thine house: thy children like olive-plants round about thy table.

Behold, that thus shall the man be that feareth the Lord.

Yea thou shalt see thy children's children, and peace upon Israel.

BIBLE. *Ps. cxviii.*

Children's clothes should be neat, but not rich, even if the means of the parents will permit it.

For temporal wealth is transitory; while rich clothing usually infects a child's mind with pride.

To cure or hide bodily defects, and to let the soul remain ugly, is nothing but whitewashing a sepulchre full of fashionable bones.

To bring them to baptism, or to the Lord's Supper, and then not to instruct them any further in Christianity, is a dangerous custom. It quenches the spark of faith, and may destroy a soul, which at the last day will cry Ah! and Wo! over the neglect of its parents.

As the years pass on, it is the duty of parents to see that their children learn something which may enable them to be of service to God and to the commonwealth.

Reasonable parents will consider not only for what their sons are fitted, but whether their own means will allow of it.

It is contrary to prudence to risk anything in hazards.

And in particular, it is an over-haste which deserves punishment, to undertake to devote children to a particular calling, even before they are born. Such destinations often have bad results.

It would be well if women were not merely made to stick fast to household affairs, but were to have their understanding cultivated and their moral nature developed, so that together with Martha's attainments in family management, they might with Mary choose the good part. Luke, x; 42.

Moderate correction with the rod, in case of positive obstinacy is better than a foolish bugbear.

Fear and terror are injurious, and often may become impossible to be removed during the whole life.

As reason grows with years, it will be well for parents to instruct children in their duties towards God, themselves, and their neighbors; to exhibit to them the reward of virtue and the punishment of vice, so that they may not go astray and fall into immorality.

Above all, parents should set their children a good example.

For children are like tinder, which quickly catches fire.

The tendency to evil already exists; and if parents nourish it by a bad example, the result is an unreasonable life, and one displeasing to God.

If parents are God-forgotten and vicious, their children will readily be led into the same vices.

Parents should punish their children for all evil deeds, but should seek prudently to avoid the two harmful extremes of too great rashness and too great indulgence.

For the former banishes love from the child, and the latter fear.

He is rather a devil to his children than a father, who denies them necessary food, clothing and maintenance, or who strikes or drives away from him those of them who are silly or deformed or lame.

And he shows a foolish and shallow love, who gives up to all their willfulnesses, and winks at their bad habits.

A middle path is best.

The Bible must be early put into the hands of the children; for this is

DUTIES OF PARENTS AND TEACHERS.

which brings the just to true wisdom and prudence. (Ps. cxix; 1 Tim. iii; 15: 1 Tim. iv; 6: Prov. xxii; 19.

CHRISTIAN BUCHNER.

If you are blessed with children, so act that your children shall be carefully trained to the knowledge of God.

If a prince had honored you by presenting you his portrait, and you, out of folly or lack of respect, had permitted it to become covered with dust, cobwebs and dirt, could you hope to receive any further favors from him, if he should become aware of your carelessness, or should see it?

But your children are the image of God.

If you act wrongly by them, the Omniscient will not leave you unpunished.

Men must consecrate to God the firstlings both of their thoughts and of their youth.

Then He will bestow his blessings on the rest.

You ought to pray for and with your children.

When your children have arisen, and are clean, washed and dressed, let them come to you and bid you a good morning.

Then you can see if there is anything wrong about them, and how to adjust it.

Then place them before you, and with uncovered head pray the prayer for parents over them, and bless them with laying on of hands; so that they may hear and understand how the eternal well-being of children is earnestly desired by their parents; so that they may not only be made more obedient, but may in the subsequent management of their own children do the like.

Watch that no wicked habit comes upon the children; for their depraved nature will otherwise always be before their better nature.

Boys and girls should always sleep in separate rooms; and brothers and sisters should not see each other without clothes, after they can go alone.

Wherever possible, each child should have a separate bed.

Do not permit your children to hear loose and frivolous stories.

A child's Bible with pictures, to be explained by you, picture by picture, is the best book for children.

Christian parents should be very careful what sort of persons they have about their children; for from these, if they are immoral or vicious persons, they often learn tricks, improper speeches and curses, which they would otherwise never have heard, much more learned.

Children are, so to speak, like apes; they will imitate what they see.

The children should not understand that their parents are man and wife.

The rod should only be used on important occasions.

Children should be made to give brief and intelligent answers. Permit no obscurity and no conceit of cunning to appear in their words. Do not praise witty children, but rather God-fearing ones.

They should be early cured of coarse and awkward habits.

Empty threats should be avoided.

The love for their children of many parents is a really foolish mere animal instinct.

Many parents admire the foolish and apish gestures and tricks, and even the improper speeches and wicked actions of their children; and thus do not love them as human beings, but amuse themselves with them as if they were young apes.

Many parents, if they have a nice morsel in their dish, give it to their children out of their own mouths, as a hen does to her chickens, and thus accustom them to lickerishness and to dainties, in a way that can produce nothing but corruption.

The more economically children are brought up, the more safely.

Mary parents beat and abuse their children for being so rude, ill-trained and boorish.

But the fault is with those who brought them up.

How can your children be well conducted, if you yourself are an uncultivated boor?

If you are a dirty fellow, how can your children be well trained?

It is as the fable reports of the crab, who told her young one not to walk backwards, but forwards. But the young one answered, "Show me the way and I will follow in it."

And that is a very foolish expression of those who say, "My children do not need to make bows. They are not going to be gentlemen."

They are not, truly!

But understand, you blockhead, that decent conduct is appropriate to all. (*Sirach*, xix; 26; *Prov.*, xx; 11.)

Parents should not treat their own children with more respect than those of others.

To do so causes jealousy, however young they are.

It displeases them; and their dissatisfaction grows as they grow older; and will in the end cause dislike, anger, enmity and revenge, even if it is not until the parents are dead.

MOSCHERSON.

Parents are indisputably most immediately called, and most naturally bound, to provide for the cultivation of the bodily and intellectual powers of those to whom they have given life.

An instinctive impulse makes them fittest and most skillful to attend to the first necessities of their children, and to endure their weaknesses with patience.

Early habituation to the company of their children makes it almost indispensable to parents in whom the voice of nature is not silenced by unhappy circumstances or by corruption of morals.

They thus learn to feel that these beings, at first so helpless, depend entirely upon their strength and their will; and this feeling which no other person can have so strongly as parents, except, (during their earliest years,) a nurse, strengthens their interest in their little ones.

The home, the family, will always be the most appropriate place for the growth of a child.

A child is like a young plant, to which a too early transplantation is injurious, even if the new soil is the best.

It is only in the family that certain impressions can be received, and certain feelings awakened, which, as being those most distinctively human, should be deeply and strongly rooted in the human breast; such are love of parents, sense of domestic happiness, early sympathy in all that relates to the family; pure susceptibilities, which contain the germ of those feelings for universal humanity, which are so easily quenched for ever.

Children who by accident or convenience, or perhaps the mistaken views of their parents, are thrust too soon out of their homes among strangers, usually cease to be children too soon, and perhaps even to have childish faults, but without becoming for that reason any better.

They omit a step in their experience which, according to the wise arrangements of nature, should not be omitted.

But the advantages above mentioned can only be expected where the parents, by their own example, awaken and nourish the germ of a pure humanity in their children; for this means is undoubtedly more efficient than all possible positive instrumentalities and institutions.

It is entirely natural that children should respect and value nothing so much as what is commended to them by the words and actions of those

whose offspring they are, under whose protection they grow up, and who are thus the first objects of their reverence and love.

The influence, moreover, of constant association, and the tone of family life which proceeds from the character and spirit of parents, have so uninterrupted and strong an influence, although it is imperceptible, that this cause alone will serve to explain all the peculiarities of children, not only the resemblances, but also—for they are not all brought up under the same circumstances and the same time, if they are by the same parents—the dissimilarities of brothers and sisters.

It is true, however, that not even the highest degree of morality and education in parents can of itself protect their children from injuries; for the world and actual life, work along with them, and join in the work of education.

NIEMEYER.

Whoever has a father, or mother, or both, must be educated by him, her, or both; and no one, neither father nor mother, can for gold or good words hire another mother and another father for their children.

Parents can infinitely lighten their duties in this respect, by apportioning to themselves such parts of the child's training as are most proper for each of them, and at the same time a corresponding part of the enjoyment arising from every advance in knowledge or usefulness.

The mutual instructive affections of teacher and pupil, in this care also diminish by at least half, the labor of the occupation.

But what is it that people of rank—the question is worth considering—secure by employing all sorts of nurses for their children?

If the question is rightly answered, this is it:—nurses' stories and all manner of vulgarisms in speech and action.

HIPPEL.

And whether a father or a mother be ever so much absorbed, one in business and labor, the other in domestic affairs, time enough in evenings and unoccupied days to instruct their children in what they themselves know—whether the treasure of their lives and experiences be great or small—to set before them examples from the Holy Scriptures and from life, to impress good advice and pious principles upon their hearts—time enough for this can be commanded even by those who have to earn their daily living by their daily labor.

I recommend my children, O God, to Thee: Thou gavest them to me, and I praise and thank thee therefor with my whole soul. Be their protection; forsake them not; bless and watch over them, so that they may easily walk in thy ways, to Thy satisfaction.

Father! Ah how many dangers await them in this world! Who could escape them unless supported by Thy hand! Let them be free from the dominion of all lusts, pure and pious; let them act only as shall be well pleasing to Thee, and disregard the impulses of vice.

I do not and ought not to pray Thee to preserve them from all afflictions here on earth; nor to reward their virtue here with constant happiness, the granting of every wish and the fulfillment of every hope; nor for such treasures as vanish away.

Give them during the journey of their lives, O Lord, only what to Thy wisdom shall seem good; only what shall render them wise and fit for heaven. If they should turn away from Thee, not all the treasures of earth could compensate for the loss of their soul's happiness.

Let but one petition from me meet a gracious ear;—Let not all their days be entirely joyless. If they are to be proved by Thee, let it be in a paternal manner; and let not their souls be deprived of faith and strength.

Let none of my children, O God, be made miserable by vice. Let none of them be a vexation to his neighbors, nor the sport of his enemies.

Let them be useful to the world, not afraid of exertion nor labor; let them live by the proceeds of their own industry, and thus escape from want.

May the triumphal day of Thy pious one be a day of bliss to me! Help me, that when we appear before Thee, none of mine shall be wanting. Then shall I say with joy, "See, Father, here am I, and here are also those whom Thy grace gave unto me to be trained for heaven."

A father should every day pray to God, "Lord, teach me aright to stand in Thy place towards my children." RUCKERT. (*Poem.*)

Education in the "nurture and admonition of the Lord," is and must be the principal thing.

All wisdom is not founded in the fear of the Lord,—all corporeal training and artistic skill, are of little use; but the fear of God, a pious Christian feeling, habitude to virtue and good order, the right training of the heart, are useful in all things. They are security for present and future happiness.

Accordingly, it is the holiest of the duties of parents, and universally for church and state, not only to train the understandings of the youthful branches of humanity entrusted to them, but to elevate their hearts, and thus to educate a future generation deserving of happiness and of a blessing. SCHWABE.

Teachers should treat their pupils as they would their own children; should have pleasure in being with and among them; should love them as affectionately as a good hen does her chickens; for in Donatus, first comes *Ama*, and *Deoce* follows afterwards. GIZAS.

The teacher should be free from all selfishness; he should love, in his pupils, themselves and humanity; he should not respect a pupil less than himself, but should even observe, with reverence, whether he has not met, in the pupil, an individual of even higher grade of mind and capacity than himself.

The teacher should use all his powers to make his pupil a more valuable man than he himself is.

He should not claim any influence over the pupil than the latter feels of himself.

If love inspire him, and patience assist him, the consciousness of his divine vocation will enable him to overcome the difficulties of his work.

He should employ only such incitements and means of training as are noble, pure, and in harmony with the essential ideas of humanity, and such as unite virtue, love, justice and beauty; so that the pupil may respect him as a true man. KRAUSE.

The first and principal mark of eminent mental endowments is a memory which easily grasps knowledge, retains it faithfully, and renders it up when desired.

The second mark is imitation.

For it indicates capacity for being taught, if young people endeavor to repeat what they see.

A young man however does not give hopeful indications by trying to imitate for the sake of making others laugh.

If he really has talent, he will be modest; a feeble intellect would be preferable to a vicious tendency.

Yet this modesty will be very different from stupidity or indolence.

What such a boy is taught, he will understand without difficulty.

He will question inquisitively about many things; thus endeavoring rather to follow than to lead.

Too early a development of the mind does not easily bear good fruit.

Such children easily learn some little things, but soon lose their mental activity.

Preocious geniuses accomplish everything quickly, but not much.

What they know has no substantial foundation.

It is like seeds of grain scattered on the surface of the earth, which indeed quickly spring up and put out leaves, but wither before harvest with empty ears.

This rapid faculty of learning is very successful in early youth, but soon comes to a stand, and all admiration of it dies with it.

As soon as a teacher has otherwise examined the capacity of a pupil, he should seek how his mind requires to be managed.

Some, if not stimulated, grow indifferent; others will not endure anything of an imperative nature. Fear restrains some, others it deprives of their spirits. A continuous strictness quite prostrates some, while others are encouraged by it.

A teacher must be able to study the variations of character in his pupils, and to treat them accordingly; and so to instruct each, that the peculiar excellences of his character will be developed, and that thus he will be directed as his powers require.

Nature must advance by means of art.

He who is urged into employments to which he is not adapted, will accomplish no more than he whose mind is neglected.

Examination of the mental faculties and of their reference to instruction is absolutely necessary.

For some show a preference for history, some for poetry, some for law; while others had better be sent to the plough.

But if we find one whose mind is quite corrupt, shall we allow him to proceed with his studies?

It is necessary for a young person to apply himself to something; shall he not be permitted to make any exertions to do so?

If he has any one good natural trait, it ought not to be neglected, but rather strengthened, and existing deficiencies, as far as possible, supplied.

Feeble intellects must be condescended to, at least so far as to learn what their natural tendencies are.

For in this way they may at least accomplish whatever they are capable of.

QUINTILIAN.

The same education, under the same circumstances, may not produce the same virtues; for these differ according to natural endowments. For instance; the manly virtues are more commanding, the womanly more obedient, in character; and in like manner, minds vary in the same sex.

Our endeavors must therefore be directed towards the subjection of the unreasoning part to the reasoning part.

Thus are the virtues produced.

Education is intended to prepare the mind for instruction in moral excellence; as the land is prepared before the seed is sown in it.

Nature has planted within us an innate faculty of knowing and of conscience; by which we decide within ourselves upon existence and non-existence, in doing and not doing, with a yes or no, without any further reasonings.

The better manners are, the better the condition of the whole state; for the power of the law rests in great part upon usage.

If the gods concern themselves about men, that which lies nearest their hearts with regard to them is their nobler part; the improvement of the mind and moral faculties.

For as the eye receives light throughout the surrounding atmosphere, so does the mind through instruction.

ARISTOTLE.

IV. EARLY TRAINING.

PHYSICAL EDUCATION.

EDUCATION should be commenced with the first appearance of the child's mind, by the mother and the nurse; in order that the child may already be receiving useful training.

CHRYSIPPUS.

Education must proceed by developing this impulse, [of imitation] which man feels by nature; and must endeavor to lead him by this road to virtue and happiness.

ARISTOTLE.

It is not at the beginning of the seventh year, as Hesiod directs, but at the very earliest age, that the mental training must gradually and progressively begin, in the same way in which the mental faculties of the child themselves develop.

But again the child should not be urged too early to continuous effort, but must rather at first be carried forward in a method more like play.

Nurses should be chosen, having good moral character and correct habits of speaking; for the first impressions upon the child are the most lasting.

In like manner should the child's play-fellows be of irreproachable morals.

The sense of honor should early be brought into activity, and be stimulated by rewards and emulation.

As there are some exercises to which the body can only be trained in youth, so the first elements of education must bring out its principal points. They will be more easily comprehended at that age.

Those parents whose own education was defective, must bestow the more care upon the education of their children.

Although scarcely so much can be taught in the first three years as in one of those which follow next after, still it is in them, that the foundation is laid.

What must sometime be learned should not be begun too late.

Precocious geniuses are of small account. Their knowledge is not firmly based; it is like a seed cast upon the surface of the ground, which withers before it grows up.

All children should in other respects be treated indulgently, and recreative plays should be provided for them; yet still this indulgence should not be carried too far, lest it produce indolence.

Whenever the pupil, from pride, bad disposition or selfishness, does anything wrong, he should be reminded of it; for as Virgil says, "Habit is important for tender youth."

The educator and teacher should have paternal feelings for his pupil, because he supplies to him the place of parents.

The children should every day carry home with them some useful instruction from the mouth of the teacher; for the living voice gives richer nourishment than reading.

The more thoroughly trained the teacher, the better he is.

QUINTILIAN.

Those cities which have bestowed most care upon gymnastics, bring their youth, it is true, to the apparent strength of an athlete; but they destroy the proper beauty and growth of the body. ARISTOTLE.

It is much better to row and dig, mow and throw the spear, run and jump and ride, hunt, fence, cut wood, carry burdens and cultivate the fields, in short to do whatever nature requires, than to practice gymnastics in palaces. GALEN.

Since the body of men comes under our care before the mind, it should be attended to before it. ARISTOTLE.

Why do you nourish and discipline (quite too assiduously) your bodily strength?

Nature has given it to beasts in greater measure.

When you have done all in your power, you will still be surpassed by the beasts. PLATO.

A child has within its mind little or nothing; it therefore learns more easily during childhood; just as we can much more speedily remember the experiences of the morning, than those which happened at a later period.

In after years, accordingly, man does much more by means of his understanding and the developed powers of it.

Man is as it were endowed with two instruments; the hand for the body, and the understanding for the soul.

Both these need development and discipline.

The love of parents for their children is greater than that of the children for their parents, because the former is much increased by recollections and by hopes.

Especially unselfish is the love of a mother; who desires her children to live, not for her sake, but for their own; and who has a strong affection for her children although they have no corresponding one for her.

Mothers love their children more than fathers, because they bring them forth with pain.

But parents should be cautioned lest this love be carried to excess.

ARISTOTLE.

Pregnant women should eat healthful food, should not neglect moderate exercise, and should above all things keep from getting into a passion of any sort, since this would have a bad influence upon the character of the child. SOLON.

A pregnant woman should keep herself as quiet and unexcited as possible.

The mother should nurse her own child when not absolutely impossible; as even she wolves and she bears do.

Spiced food and heating drinks are poison to children.

When the understanding of children awakens, the first foundation must be laid in everything which they will have to learn in after life; in physics, by beginning to learn to know stones, plants, trees, &c.; in optics, by distinguishing light, darkness, colors &c.; in astronomy, by observing the sun, moon and stars, and their movements; in geography, by proceeding from the knowledge of the cradle to that of the room, the home, the street, fields, and so on. COMENIUS.

As good bodily health in youth is the necessary condition of a healthy old age, the bodily exercises of children should not be neglected, and care should at the same time be taken that they are not made to lose their strength; which, according to Plato, is produced by sleep, and hard work.

As we prepare in good weather whatever will be needed in a storm, so in youth must we lay up orderly habits and moderation, as savings against time of age.

Children should be led to industry in useful learning by persuasion and admonition; but never by blows and disgraceful treatment.

But such things only make them disinclined to effort and disgust them with their labor.

Blame and praise should be used alternately; but care should constantly be taken that the former does not discourage, and that the latter does not render over-confident and careless.

As a plant is nourished by moderate watering, but is drowned by too much, so are the mental powers of children strengthened by labors judiciously imposed, but are destroyed by excessive tasks.

Children should never be refused their necessary recreation; it should be remembered that nature has divided our whole lives into labor and recreation.

Thus we slacken the strings of the bow and the lyre, that we may be able to tighten them again.

Children must also be accustomed not to live effeminately, to restrain their tongues, and to overcome their anger.

Yet fathers should remember their own youth, and should not judge too harshly the transgressions of their sons.

As physicians mingle bitter drugs with sweet confections, and thus make what is agreeable a means of administering to the patient what is healthful, so should fathers unite the severity of their punishments with kindness; should sometimes give the reins to the impulses of their sons, and sometimes check them; should be forbearing to a mere error, and even if they suffer themselves to become angry, should recover again from it.

It is often well to pretend not to have observed some action of children.

When we overlook the faults of our friends, should we not sometimes do the same for those of our children?

Children should be taught to be communicative and open; to avoid all that savors of secrecy, which tends to lead them away from uprightness, and to accustom them to wrong.

The understanding is not a vessel, that needs filling; it is fuel, that needs kindling. It is kindled to truth by the faculty of acquiring knowledge, and by love.

He who listens to the speech of another without kindling his understanding at it, as at a light, but contents himself with merely hearing, is like one who goes to a neighbor for fire, but only sits still there and warms himself.

He only receives an appearance of wisdom, like the red color from the shining of a flame; but the inner rust of his soul is not heated; nor is its darkness driven away.

PLUTARCH.

He who disciplines his body is healthy and strong, and many persons have thus rescued their lives from danger, served their friends, been useful to their country, gained fame and glory, and lived a happy life.

The body becomes accustomed to whatever occupation is pursued; and accordingly it should be trained to the best exercises.

Forgetfulness, despondency, ill temper and even frenzy, often assail the mind, in consequence of neglect of bodily discipline, with so much power, as even to cause the loss of what knowledge is already gained.

SOCRATES.

As the power of speech is easily misused, so are gymnastics; for superiority in bodily exercises can easily be abused to the injury of others.

He who practices nothing but gymnastics, is liable to run into barbarous and violent ways, and produces towards himself that slavish state of feeling which does its duty only out of fear.

Where mental training is wanting, the position of man is infinitely low; he becomes like a beast.

PLATO.

Childhood and youth ought to be the period of cheerfulness, of bodily exercises, of enjoyment and pleasure.

Do not destroy this happiness, ye otherwise tender parents, by too early employing them in the business and duties of a subsequent age, to which they may never attain.

BASEDOW.

Happiness of the human race by means of education.

Man has, corresponding to his threefold home—the mother's womb, earth, and eternity—a threefold life; vegetative, animal, and spiritual.

All men are in need of instruction; by which the image of God is restored within them.

Every man is a world in little—a microcosm.

All instruction will meet with easy success, in proportion as its method is according to nature.

Instruction should begin in early youth, and should proceed gradually, according to the development of the capacities. It should begin, not as is common, with languages, but with things.

Kind and loving parents and teachers, cheerful school-rooms, playgrounds, and a stimulating and natural method of instruction, must all be united, in order to make learning pleasant.

COMENIUS.

Mother's milk is the best nourishment for the child, both food and drink; for it nourishes it well.

Mother's milk is best and healthiest for the child, because it is accustomed to it from birth upwards.

Children who have low nurses turn out like them, as experience shows. It is therefore unkind and unnatural for a mother not to nurse her child, for God gave her her breasts and her milk for that purpose; unless she is unable to do it. Need breaks iron, says the proverb.

It was a thing very well imagined and enacted by the ancients, that they caused all persons to have and practice some useful and honorable occupation, so that they might not fall into habits of drunkenness, vice, gormandizing, guzzling, and gaming.

Therefore these two exercises please me best of all, namely, music, and knightly exercises, including fencing, wrestling, &c., of which the first drives care and melancholy thoughts away from the heart, and the second gives handsome and symmetrical proportions to the body, and keeps it in good health by exercise.

Poor people's children, who have only bread and water to eat, are handsomer and more perfect and strong in body, than those of the rich, who have every day their full of all manner of delicacies to eat and drink, and yet are meagre, bony and yellow.

LUTHER.

If you follow nature, the education you give will succeed without giving you trouble and perplexity; especially if you do not insist upon acquirements precocious or over-extensive.

Great care must be taken of the body.

Moderate exercise is very strengthening; and therefore ought nurses—who should be selected with care—to be diligent in carrying children about in fresh air, to the temples, and to visit their relations.

The dispositions of children, instead of being made touchy, irritable or froward by indulgence, or cowardly and slavish by excessive harshness, should be made as open and cheerful as possible, and they should be taught to use either hand alike.

Beginning with the third year, when the intelligence and the power of speech awake, the child should be occupied with plays appropriate to its age. From these plays a judgment may be formed of the child's adaptableness to a future calling.

Changes of toys should not be made too rapidly, for fear of developing instability of character.

From the third to the sixth year, suitable stories should be told the child; and these should be such as to furnish him with ideas of God and of virtue.

Parents and teachers must seek occasion of securing and maintaining influence over children by means of personal respect.

Bodily punishment is only admissible where children or pupils violate the respect due to age, or a law of education.

On the other hand, the sense of shame and of honor should early be awakened.

Parents should be more anxious to instill into their children a deep-seated youthful modesty, than to leave them a pile of gold: and therefore they should carefully keep from the sight of the young all that can injure their modesty or morals.

For where the old are immodest, the shamelessness of the young is increased.

PLATO.

To the mother belongs the bodily nourishment and care of children; to the father, their instruction and education.

The distinction of sexes must early be observed.

Milk is the most natural and therefore the best food for children. Wine injures them by heating them and causing sickness.

Even children at the breast should be accustomed to suitable exercise. Children should early be accustomed to heat and cold, to confirm their health; and all habits should be taught from as early an age as possible.

Children should not be obliged to do actual labor, nor to be instructed, before the fifth year, for fear of stunting them.

The loud crying of children—unless it is caused by sickness—is their first gymnastic exercise.

Their plays should be in the similitude of what they are afterwards to practice in earnest.

ARISTOTLE.

Since children are always possessed of great liveliness and susceptibility, since their powers of observation grow keener and stronger as their consciousness develops, and their impulses to activity are stronger in proportion as their character is nobler, therefore proportionately greater care should be taken to preserve them from immoral influences, to protect and direct the growth of the mind, and to accustom them to proper modes of speech.

Parents and teachers should show to their children and pupils a truly virtuous example; and punishments should be proportioned to faults, and should be so administered as to produce improvement.

Although the virtues of good nature, mildness and placability are high ones, still they must have their limits; and must not interfere with the strictness necessary to maintain the laws.

Man must early be trained to the conviction that the gods are the directors of all things, and that they see the inmost thoughts of men.

It is only by this means that men will be preserved from foolish presumption and from wickedness, as Thales says: That men must live in the consciousness that all around them is filled with the gods. This will keep them more chaste than if they were in the holiest of temples.

From religion, which is a holy fear of the gods, proceed the virtues of modesty, and filial piety.

The peculiar traits of each character should be developed; it should not be attempted to impress a foreign mark upon them; just actors are wont to select not the best parts, but those most suitable to them.

It should not be claimed that there is no art or science of training up to virtue. Remember how absurd it would be to believe that even the most trifling employment has its rules and methods, and at the same time that the highest of all departments of human effort—virtue—can be mastered without instruction and practice. CICERO.

The education of children should begin at their birth.

Bathing children and letting them crawl about are to be recommended.

We came into the world entirely ignorant, and with incapable bodies, but with the capacity to learn.

Man learns incredibly much in the first years of his life, by mere experience, without any instruction at all.

Impressions on the senses supply the first materials of knowledge. Therefore it will be well to present these impressions in a proper order. Especially should the results of seeing be compared with those of feeling.

By motion they learn the idea of space, so that they no longer grasp after distant objects.

Children speak at first a universal natural language, not articulated, but accented and intelligible.

Nurses understand this language better than others, and talk to the children in it.

What words are used in it are indifferent; it is only the accent which is important.

It is assisted also by the children's gestures and the rapid play of their features.

Crying is their expression for hunger, heat, cold, &c.

Their grown up guardians endeavor to understand this crying and to stop it; but often misunderstand it, and try to stop it by flattery or blows.

The first crying of children is a request.

If this is not attended to, they proceed to commanding.

They begin by helping themselves, and end by causing themselves to be waited on.

All the bad conduct of children arises from weakness.

If they are made strong, they will be good.

One who can do all things, will never do anything evil.

Before we come to our understandings, there is no morality in our actions; although we sometimes see manifestations of it in the susceptibilities of children to the actions of others.

The tendencies of children to destructiveness are not the result of wickedness, but of vivid impulses to activity.

Children should be helped when it is necessary; but no notice should be taken of their mere notions; and they should be made to help themselves as much as possible.

Causeless crying will be best cured by taking no notice of it. For even children dislike to exert themselves for nothing.

Crying can be soothed by drawing the child's attention to some striking object, without letting it know that you are paying it any special attention.

Costly playthings are superfluous. Cheap and simple ones are precisely as good.

Nurses can entertain children very much by telling them stories.

Some few easily pronounced words should be often pronounced to the child, names of things which should be shown to them at the same time.

ROUSSEAU.

(To be continued.)

II. LETTERS TO A YOUNG TEACHER.

BY GIDEON F. THAYER,

Late Principal of Chauncy-Hall School, Boston.

WHETHER the absurd method of teaching Geography, which obtained in the early part of the present century, is now practised to any considerable extent, or not, in our country, is matter of conjecture. In districts remote from educational centres, where few if any conventions of teachers are held, and opportunities for comparing views among members of the fraternity are rare, improvements are tardily introduced, and the traditional modes of a less enlightened day, are, in such localities at least, doubtless adhered to. The memoriter lesson is marked, "Get from *here* to *here*," and, the language learned and recited "word for word like the book," according to order, the pupil is dismissed with approbation,—"*perfect*, not having missed a word." Ay; he had missed no *word*; but what *ideas* has he acquired? What has he learned of the form of the countries; their relative positions on the earth; the habits of their people; their productions, climate, and so forth? Can he give you any rational account of any of these? Is he able to describe the form of the territory, or its surroundings? Can he indicate the direction of it from his own home, or answer any of the numerous inquiries that the subject naturally suggests to the mind?

When we confine ourselves to the strict and meagre definition of the word geography,—a description of the earth,—we exclude a large amount of valuable knowledge, which is so intimately connected with geography, as to be claimed as part and parcel with it; or—if this is saying too much—should, at any rate, be studied along with it.

There is not, perhaps, in the whole range of studies introduced into our schools, one so suggestive as that of geography; a study which so naturally introduces so extensive a circle of connected subjects; subjects that can more appropriately and naturally be taken up with geography than by themselves or in any other connection. Geography, therefore, needs to be *taught*; and, without wholly discarding the text-book, the subject should exist mainly in the teacher's

mind, that, having drawn, as it were, the *text* from the book, the discourse upon it should emanate from the living soul of the instructor. Thus, and thus only, as it seems to me, can that life and spirit be imparted to it so indispensable to infuse the principle of reality.

Hence, there exists a necessity, more or less pressing, for introducing, in these Letters, some account of what may, perhaps, be considered a better method than that of our fathers.

The most effectual way of teaching geography, unquestionably, is to visit the spot of earth under consideration, and *there* make it the subject of inspection, remark and explanation. No description in language can equal this, nor convey to the mind of the learner any conception of the reality to be compared to it. Next to this is the seeing of the figure of it in material form, with due proportions preserved,—the larger the better,—with all the variety introduced that belongs to the original, as far as the size of the copy will admit. Next, a drawing of the same, including all the lines and boundaries, representing countries, districts, cities, seas, rivers, lakes, mountains, &c.

Proceeding in this order, then,—first by personal inspection, second by the artificial globe, and third by maps,—we are prepared for the filling up of language, describing to the learner whatever he may not fully comprehend, and furnishing such information respecting the productions, people, climate, government, and institutions of the region, as are most important to be known.

We will suppose, then, that there is in the school-room an artificial globe, to which the attention of all the pupils is to be called, and the representation of its great natural divisions of land and water pointed out; first, so far as the “four quarters of the globe” are concerned, and the oceans and seas connected therewith. This is as far, perhaps, as the subject could be successfully unfolded to all classes and all ages and grades of mind in the school at once.

The lowest class, or beginners in the study, should now be taught the definitions of the names of the simplest objects,—land and water,—the pupils, at the same time, sketching them, one by one, on their slates or paper,—the teacher having first given their forms and names on the black-board. If the learners first copy the figures from the teacher's drawings, there can be no objection. Many would, doubtless, need this assistance, particularly the very young, at the start. There is no injury done to them by this kind of aid. It is necessary only to stop short of the point where the child's mind and thought are to be principally exercised. At first he will and must be an imitator. Nay, the same instruction must be again and again repeated.

To say that the child is "stupid" will never enlighten him. It may, and doubtless will, mortify him, perhaps discourage him, and excite a spirit of anger or dislike towards the teacher. But great consideration must be exercised towards children, whose stock of ideas is very scanty, and who are entitled to, not only a large extension of patience on the part of the teacher, but of encouragement also.

When the lesson — which should be a short one — has occupied a sufficient amount of time and attention, the black-board should be sponged clean, and the sketches of the pupils be removed from slates and papers. The catechetical exercise should follow; and, as the pupil answers the question, "What is a cape?" he should be required to draw it on the black-board. It will be found useful, at first, mnemonically, to present certain questions in pairs, — giving those relating to land divisions along with the similar ones in connection with the water, — as an island and a lake; a small island and a pond; a cape and a bay; a sea and a continent, &c.

When these simple terms for natural divisions have been fully mastered, so as to be known by sight and name, the child should commence map-drawing. Let it begin with his own play-ground or house-lot, extended to the public square, mall, common, or other well-known enclosure in his neighborhood, and thus carried on till the town or village is pictured before him. If he is capable of it, he should be required to introduce the various mountains, hills, rivers, lakes, ponds, brooks, &c., that are embraced within the limits of the sketch; but this would usually be too much to expect from beginners. Encourage him to attempt all that he can be reasonably expected to accomplish; but nothing more than he can comprehend and explain.

As he advances in grade, he will be able, with similar leading of the teacher, to give the outline of the State in which he lives. This, like the first step, may be made a very interesting class exercise. Let, for example, the subject be the State of Massachusetts. One boy gives, on the black-board, the form of the whole territory; the next is directed to mark the most easterly county; another the next in course; and so on to the most westerly. The most southerly is then described, followed by the next onward toward the north, till the most northerly is indicated. The members of the class are then called on for criticisms, and any one who detects an error in the form or locality of any county, is sent to the board to correct it.

The rivers, mountains, and cities or large towns, are then "located" in the same way; and, if appropriate instruction has been previously given, questions may be put as to the peculiarities of any of them, — as the heights of the mountains; the character of the

rivers—whether navigable, or not; whether used for power in manufacturing, or otherwise; whether affording fish, or not, and what varieties;—and of the cities, as for what, of a remarkable nature, they are distinguished. These details, and others in variety, will, however, as a general thing, be found better adapted to a more advanced stage in the course. But, as far as is attempted, all should be done thoroughly; the exercise to be repeated, from time to time, till every member of the class is familiar with every part of the lesson, and each one can draw the whole, with a good degree of accuracy, from memory.

It is well for the pupil to fix in his mind the resemblance which any country or district of country bears to any object with which he is familiar; as Italy, in the form of a boot; South America, resembling a shoulder of mutton; and the like. Let this resemblance be real or fancied, it will aid him in his task.

When the pupils shall, by this method, have caught the inspiration from the teacher, they may be furnished with an engraved skeleton or outline map, selected at the teacher's discretion, for practice by themselves. Much time, which would otherwise, perhaps, be lost or wasted in idleness, may be thus occupied in filling it up, improving their knowledge of geography, and their style of writing and printing, at the same time.

Some schools that I have known have, by a similar course, become remarkably expert in map-drawing,—securing accuracy of form and proportion, as well as beauty of coloring and penmanship, in the various styles of chirography and pen-printing.*

The other States of the Union may be taken up in the same way, followed by a combination of the New England States; the Middle, the Southern and Western; and, finally, making a grand review of the United States, in one map. Frequent reviews, from point to point, would be necessary to keep the mind familiar with the ground gone over.

Before proceeding further with the American continent, it would be well to cross the Atlantic, and take up the British Islands; sketch the outline of Great Britain, and fill up, as on this side of the water. Thence, cross the Channel to the continent of Europe; make an outline of the whole, and divide the countries as was done by the counties in the lesson on the State of Massachusetts. Subsequently, draw the countries separately, and practise upon them till the form of each one becomes as familiar to each pupil's eye as that of his

* That of William B. Fowle, of Boston, especially.

native State. The remainder of the American continent should follow, with the islands along its coasts. Then Africa and Asia. Every region has its points of interest, but a careful discrimination should be exercised, and time and labor be given to those portions of the world a knowledge of which would prove most satisfactory, agreeable, improving, and useful. To devote much time to crowding the memory with many of the names of places in Africa, for instance, which one would scarcely meet with, except in a treatise on Geography, in the whole subsequent course of his life, would hardly be a wise appropriation of time and study.*

Europe, in its various divisions of Northern, Southern, Central, &c., concentrating so many specimens of grandeur, beauty, natural curiosities and interesting phenomena, and presenting, in its historical records, such a storehouse of the wonderful, the heroic, the patriotic, the scientific, the brave, the self-sacrificing, and the patiently enduring, — besides having been the home of our fathers, — will naturally be found the most attractive and interesting to the learner, of the various foreign regions of the world. He should therefore dwell longest upon, and make himself best acquainted with, that portion of the world; and, as I have before intimated, should be directed by the teacher, as he is mapping out the different parts of Europe, either as countries, districts, or cities, to the birthplaces of the world's benefactors; the scenes of their labors, their sufferings, or their glory. He should remember the good of all creeds, — Plato and Aristides, Brutus and the Gracchi, Alfred and Charlemagne, Gustavus Vasa and William Tell, Laplace and Humboldt, Shakspeare and Milton, Newton and Wilberforce, Fencelon and Jenner, and Hannah More and Grace Darling, and Mrs. Frye and Florence Nightingale, — omitting none of either sex, wherever humanity demands a notice of them.

Palestine and other parts of Asia will also readily attract his attention, and the scenes in which the patriarchs and prophets of the

* It is not indispensable that the precise order of the maps attempted, as above indicated, should be invariably followed. There may be a better arrangement. In some atlases a convenient and rational order is laid down; and if outline maps, adapted to them, can be had, they will prove an important gain to the learner. My object is to secure a rational and regularly progressive order, which with some is sacrificed to inadequate considerations.

It would be nearly, if not quite, impossible for the pupil, in the usual time devoted to school education, to draw a map or maps of every considerable portion of the globe, without injustice to other studies. It is, therefore, proper to begin with those in which we have the greatest interest, or with whose inhabitants we cherish friendly or business relations. After this suggestion, the teacher's own reflection will be a sufficient guide.

Hebrews took part, and those which were rendered sacred and memorable by the establishment of the Christian religion and the attendant "mighty works" and sufferings of its great Head,—Bethlehem, Nazareth, Jerusalem, Capernaum, Mounts Zion and Tabor, and the Mount of Olives,—all these should be pointed out. The birthplace of Paul; the isle of Patmos, where John closed his long and memorable life; and whatever else of equal interest is known concerning these and other distinguished men, who figured in the sacred history and geography of their times.

In sketching the maps of our own country, the same course should be pursued, and the pupil's attention drawn not only to the birthplaces of the great and good men who have lived and left examples behind for our benefit and imitation, but also to the spots consecrated by their deeds, or by their blood shed in the cause of national freedom, as Lexington, Bunker Hill, Yorktown, Saratoga, Trenton, Long Island. These, with their heroes and martyrs, should be commemorated. Mere military success I should not deem sufficient cause to "make a note of;" but in other countries, as well as in our own, where victory in battle had enabled an oppressed people to throw off the yoke of tyranny, or assist in setting a nation free, I would direct the attention of the learner to it, and to the leading spirits of the struggle. And this would introduce such places as Marathon, Thermopylæ, and Banockburn.

If it be objected that this is *history* or *biography*, I reply, that no better auxiliary to the teaching of geography can be introduced than those facts and men, which places on the earth bring to the mind, when they are truly memorable in themselves. I would further maintain that geography and history should not be separated, but be always taught and studied together. One assists in acquiring and retaining the memory of the other, and both increase in interest from the union.

The teacher may throw in many a useful word to his pupils in their process of map-drawing, especially in regard to the ridges or chains of mountains in the several continents—how they follow, in their direction, apparently, one particular law or rule in one hemisphere, and a different one in another; so that an observant eye may distinguish the country to which the mountains belong, simply by the direction and relations of the mountains themselves. So in regard to the course of rivers, whose tendencies are in uniform directions in neighboring localities. The teacher will here indicate the cause of this, and also, when their directions vary, state what is the cause of such variation.

The pupil observes, that, in some parts of the world, there are but

few rivers. He may not speak of this, but should have the reason for the fact stated to him. He finds, too, that in some countries there is little or no rain; in others, a great deal; and in others still, periodical seasons of rain, lasting for months together. Tell him why it is so. Also, the causes of the trade winds, whose operations seem so wonderful, and yet are made so subservient to the welfare of the mercantile world.

Let him know something of longitude and latitude, and, as soon as he is able to comprehend their meaning, give him simple problems, to test the utility of this knowledge. In travelling, he hears his father say his watch is too slow, and that they are about two hundred miles from home, in an easterly direction. Ask him the longitude of the place, and if he knows the longitude of his own residence, he will say it is —°, or about three degrees less than at his own home, and that the watch is twelve minutes slow. Or, he has travelled in an opposite direction about ninety miles, and his watch is fast, and he may perceive and say that the watch is fast six minutes, and the longitude is one and a half degrees greater than at his own residence. He reads in a newspaper that a ship has been spoken at sea, in a given latitude and longitude, and, turning to a map covering that point, he will see just where the vessel was, at the particular hour when she was seen and spoken.

Tell him, at this stage of his progress, that while we measure the sun's *time* east and west, we reckon his degree of *heat* north and south. Hence he will perceive that, in going from this latitude towards the north pole, the cold will continually increase; and that in travelling in the opposite direction, till he reaches the equator, the heat increases in a similar ratio. Give him next some account of the zones, and the causes of the varied temperature in each. Direct his attention to the productions of these widely-differing portions of the globe. He will perceive that they are distinctly marked in every department of creation, — man, beast, reptile, bird, vegetable, fruit, flower, — and that the production of one zone is rarely found living or growing spontaneously within another, excepting in contiguous or proximating parts. Tell him where to look for the strong, industrious, intelligent, matter-of-fact man, who earns his subsistence and makes the world happier by his labor; and show him that the animals, the fruits, and the vegetable productions of that zone partake of qualities adapted to just that race of men.

The same may be said of the others. Where the physical wants of man are few, little in the way of labor is required of him. Excessive heat abates his strength, and nature feeds and clothes him from

her ample storehouse. She feasts him on her luscious fruits, regales his ear with her rich music, fascinates his eye with her gorgeous coloring, and ravishes his smell with her exquisite odors.

In others, again, — in the colder portions, — where little grows or can grow, the inhabitants are few, and they become inured to hardship, and do but little else than perform the natural functions which carry them through a brief and precarious existence. The few brute animals and vegetable productions thereof, partake of the same low grade of properties and qualities, and exhibit a rigid adaptation to what may be termed the law of the climate.

Hence, the pupil may be led to know what to expect from man, beast, fruit, and flower, by ascertaining the part of the globe — mainly the latitude — in which they are found. Taking a list of the districts of a country, cities, and large towns, and comparing them, the known with the unknown, a pretty correct idea may be formed of the temperature and natural productions of each; the probable vigor, effeminacy, and habits of the people. This rule is not to be taken without limitation, for modifications, more or less considerable, are produced by circumstances, which should be pointed out by the teacher.

An agreeable mode of giving a practical character to this part of our subject, and one that is adopted in some schools, is, for the teacher to read from a mercantile newspaper some of the various advertisements of the merchants, making them texts to be commented upon, and to form the basis of a catechetical exercise. Here we read of tea, gunny bags, saltpetre, mace, sumac, spelter, coffee, indigo, cassia, opium, sugar, hemp. Now the question is, first, Whence came they? or, in more familiar language, Where did they come from? This question may be followed by others, in variety, to any extent that the time of the teacher will permit; as, Where is the *place*? is it a city? an island? *what* is the article advertised? what are other productions of the same place or country? the habits of the people? their history? their government? the population of their chief cities? their religion? &c.; bringing out more thought and imparting more information than the same amount of time could do in almost any other course. I am aware that the lack of *time* would not allow every teacher to indulge himself and his school, to any great extent, in this interesting and useful exercise; but still, in my judgment, if but fifteen minutes daily were to be thus appropriated, the advantage to the school would be great, and the good effects on the *families* represented therein would be strikingly observable. How many persons there are, on all sides of us, that have not the slightest idea, even, of the countries which produce the most common articles of daily domestic consump-

tion or use, and even the meaning of the names of many articles constantly advertised in commercial papers! What is learned at school is usually talked about at home; and especially any new idea about *things*, that comes to the learner in a pleasant way, without the formality of an assigned task, and, consequently, without study.

In connection with this exercise, the routes usually pursued by navigators to and from the several ports, from which the articles of commerce, that become the subject of conversation, are imported, would be found a matter of curiosity and interest; and I believe none of our school-books in present use refer to the subject at all. I do not complain of this, but would recommend to the teacher to introduce it along with this miscellaneous exercise, as sure to give much satisfaction to the inquiring minds among his pupils. Caleb Bingham, the best teacher that Boston had in his time, had some questions and answers of this kind, in his little work, called *The Geographical Catechism*, which in my childhood was a great favorite with me, and whose impression, although many a long year has passed since I studied it as a class-book, is still vivid and pleasant in my memory.

Among other facilities for illustrating the subject of geography, are the raised maps, or maps in relief, representing the inequalities of the surface of the earth. These maps are found highly useful with the advanced classes of a school, whose members are capable of comprehending the scale of comparison introduced, and always fix and reward their attention. They are confined principally to mountainous countries, but are not without interest when typifying those that are comparatively flat. Several have been imported, representing Italy, Switzerland, Europe, Germany and the Netherlands, France and Belgium, Mont Blanc and environs, and others,—whose most prominent mountains can be easily recognized by those who have travelled in the several countries, and have felt a sufficient interest in the subject to ascend their grand elevations, and institute comparisons between them. Those of the greatest altitudes loom up, even in these miniature models, with a degree of grandeur not readily anticipated, when the scale on which they are necessarily projected for school uses is considered; and they challenge the admiration of the young student, as, assisted by them and his own imagination, he climbs their snowy tops, and looks, almost giddy, into the vales below.

In some portions of a country denominated “hilly,” the surface of the map is little more irregular than the outside of an orange; while that of others, like Mont Blanc, presents very striking elevations.

Thus, from the ordinary hill to the lofty peaks of the Alps, a careful, and, apparently, correctly-graduated scale, is adopted and followed throughout. Every teacher, therefore, who can command a set of these maps, would find great utility in their use.

They might be used to advantage in connection with the engraved classification of mountains, found in many school atlases.

The mere learning by rote of the names and heights of mountains, of the elevations and depressions from the surface of the sea of various territories, can make no impression on the mind to compare in permanency with what is acquired through the medium of the eye, assisted by the judgment; and hence these maps have claims superior to the other means of instruction and illustration, which have usually been found in the schools.

I have purposely avoided making the discriminations of Physical, Mathematical, and Political geography, because I wished to range freely and at large over the wide field embraced in the general subject; and because I believe that, in traversing the surface of the globe, unfettered by technicalities or rigid rules, I could appropriately touch upon any topic having near relations to the soil, and what it is producing, or has produced, worthy of being known to the young. Method is well, and there are studies which require a rigorous adherence to it, and particularly as the student advances in years and mental capacity; but, as I wander with my pupil, for a peripatetic lesson, and call his attention to the flower by the wayside, the rock of the crag, or the lofty tree of the forest, so, in the survey of the crust of the planet we inhabit, I cannot willingly pass specimens of the striking, the noble, or the instructive, without endeavoring to turn it to a profitable account.

We cannot make the school-boy's task too agreeable. There is no danger that he will not have labor enough, and vexation enough, and confinement to his books and the school-room sufficient to exercise all his patience and temper, his memory, his reasoning powers, and his physical endurance,—give him what auxiliaries we may. And this should always be borne in mind. The work that he is capable of doing I would require of him; but whatever of sunlight can be thrown in upon his path of intellectual toil should not be withheld. He will then not only acquire more, and comprehend what might otherwise be obscure in his mind, but will *enjoy* as he labors, and thus be encouraged to press on to higher and nobler attainments, urged by his own wishes and feelings, rather than by the requisitions of those who direct him. This is not only desirable for the pupil's sake, but changes the teacher's task to a delightful recreation.

III. SCHOOL ARCHITECTURE.

PLANS OF UNION SCHOOL-HOUSE IN ANN ARBOR, MICHIGAN.

THE grounds of the Public High School or Union School in the city of Ann Arbor, Michigan, occupy an entire square—in the center of which (Figure 2) the building stands. That portion which is in front is planted with trees and shrubbery, so dispersed with intervals of green sward and parterres of flowers, by an experienced gardener, as to produce the finest effect. The portion in the rear is divided into two yards, appropriately fitted up for the recreations of either sex.

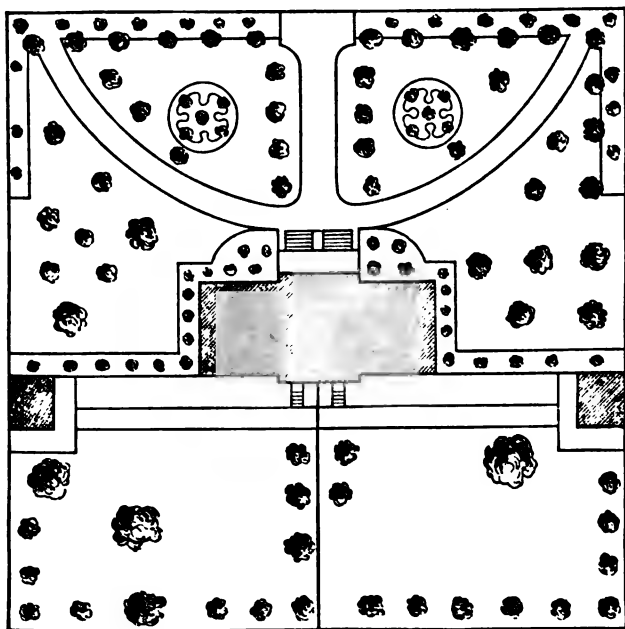
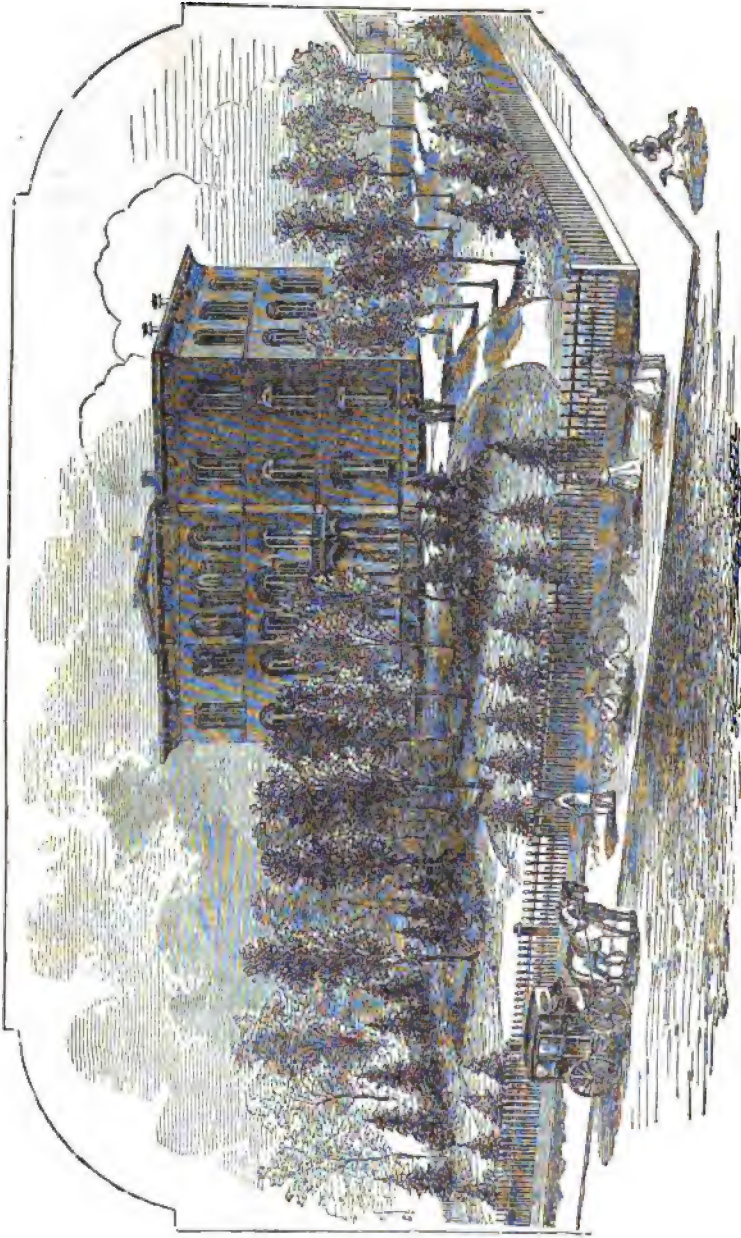


Fig. 2. GROUNDS.

The building is three stories high, as is shown in Figure 1, besides a basement 9 feet high. The first and second stories are each 12 feet, and the third story, which is finished in one hall, used for chapel and other general exercises of the school, is 16 feet in the clear.

The two wings on the first and second floors are occupied by class-rooms, (A.) each 36 by 37 feet—those on one side for girls and those on the other for boys—each class-room having a large recitation room (B) On the lower floor one of these rooms is occupied by the library, and the other by apparatus. There are appropriate rooms (D. E. C.) for depositing outer garments. The furniture is of the latest and best style for strength and convenience. Ventilation is secured by separate flues, (V.) and the entire building is heated by air, warmed by furnaces in the basement, and introduced at different points (h.)

The grounds, the school-house, and the school constitute one of the attractions of Ann Arbor.



PUBLIC SCHOOL IN ANN ARBOR, MICHIGAN.

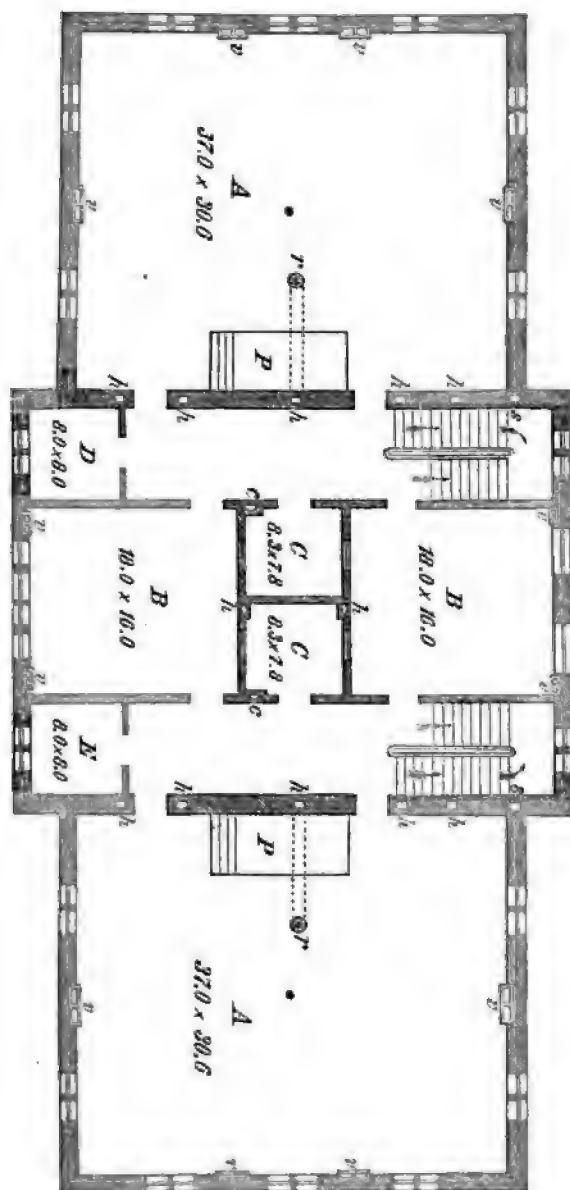


Fig. 3. FIRST AND SECOND FLOORS.

IV. CHARLES E. HOVEY.

CHARLES EDWARD HOVEY, first principal of the Normal University of Illinois, was born in Thetford, Vt., April 26th, 1827. His parents were intelligent and laborious; wringing from the hard soil of a New England farm the comforts but not the luxuries of life for a large family of children. Appreciating the value of education, they not only gave their children, without distinction, the benefit of common school instruction, such as it was a quarter of a century ago in Vermont, but also encouraged several of them to seek by their own exertion for knowledge at higher sources. Two of them, besides the subject of this sketch, are graduates of Dartmouth College.

In boyhood, Mr. Hovey was distinguished for activity and boldness. He had no special predilection for study, and made no rapid strides in gaining knowledge. He kept pace, however, in his progress, with those of his own age, and early conceived an admiration for the office of teacher. A desire to reach this exalted position may be numbered, the writer has reason to believe, with the chief incentives to study which at that time affected his mind. When about sixteen years of age, he began to prepare for college; studying for the most part in the academy of his native town, and obtaining the requisite funds by "teaching school" during the winter months. His success as a teacher, at this early period, was, in his own opinion, very moderate. Having no adequate conception of his work, he observed the customary routine of labor, and was satisfied if "the sums were done" and the scholars "made to mind." Whether, however, his standard of duty was then lower than that of many teachers who enter the school-room for the winter, giving the rest of the year to other pursuits, may perhaps be doubtful; for men do not commonly honor with their highest respect and love a calling to which they resort, for a brief period only, *in transitu* to something better.

Mr. Hovey entered college in July, 1848, and pursued with energy the regular course of study. His standing as a scholar was good; but he exhibited no special preference for any one branch of knowledge. His love of public speaking and debate was marked, and several orations which he delivered attracted considerable attention. Social, active, and energetic, he was generally successful in accomplishing his purposes. In the last year of his course, he was elected president of the "Social Friends" by a handsome majority. One-



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half the undergraduates were members of this society, and the other half of the "United Fraternity." The presidency of one of these societies was esteemed the highest honor which the students were able to confer upon any of their number.

The winters of his college course were spent by Mr. Hovey in Massachusetts. His first school was in the town of Buxford, where he began at length to appreciate the teacher's work and to feel his own deficiencies. "He was faithful, efficient, exemplary, energetic, and talented," says a resident of the place, "loved by his pupils, by their parents, and by those who became acquainted with him." The next three winters were passed in the town of Newton, and the following letter from Dr. Henry Bigelow, chairman of the school committee, will sufficiently characterize his labors.

NEWTON, Mass., Nov. 16, 1858.

Dear Sir:—I have received your note of inquiry, and shall take pleasure in answering it to the best of my ability, as I have very pleasant and vivid recollections of Mr. Hovey's service with us. And this, not on account of any very prominent success he had as a teacher, for his field of operations while in our town was very limited, and by no means of good soil or previous good culture. I remember him as a man of energy, ambition, and natural and acquired habits of mind which would have insured him larger results had he enjoyed a better opportunity for their display. He taught one of our district schools for three consecutive winters. It was esteemed the most backward of all our schools, partly perhaps from locality, partly perhaps from other causes whose mention would not be pertinent to the present object. Into this school our friend speedily introduced a new era—one of life, order, and earnest work. Into this community he infused a new interest in behalf of the education of their children. He was also able to awaken in the people themselves not a little zeal for self-improvement by methods easily adopted during the long evenings of winter. It was astonishing how thoroughly he had the people under his control; his activity and devotion having first won their confidence. He put his hands unforbidden into their pockets, and supplied his school-room with the best outline maps, a clock, thermometer, etc.; he magnetized them with his educational ardor, and drew them unresistingly to the evening assemblies at his school-room, where he at once organized an association for discussion or other profitable engagements; and he divided them into small committees, who should in turn visit and observe his daily work among their children. All this, you will see, made a deep, an abiding, a salutary impression. And, when you consider that this was not done in a community possessed of much cultivation, or which had awakened to a sense of the value of an education, or of the necessity of much effort on its own part to insure the success of its school system, but rather the reverse, and that the actor came a stranger and merely as a temporary visitor, you will grant that he deserves credit for much natural energy as well as for a spirit of disinterested self-sacrifice. Thus people showed their respect for him, not only by doing his bidding, but repeatedly by more specific evidences of a gratifying nature.

I ought to allude here to the active interest which Mr. Hovey always took in the "Teachers' Association" of this town. He was prompt at all meetings and foremost in devising methods to secure an interest among others, and always ready to bear his part in all the active duties of the organization. In fact, some charged him with being too forward—an accusation very commonly thrown, from those too diffident or too incompetent, at those who, perhaps from conscious power, take the prominent places and hold them. More delicacy of character at that time might have drawn to him more friends among his fellow-teachers, but that was doubtless to appear, when the ardor of youth and the zeal of first beginnings should become tempered with the experiences of manhood and a larger jostling with the world. Excuse me for not being more explicit and more at length.

Yours, very respectfully,

HENRY BIGELOW.

Soon after leaving college, Mr. Hovey took charge of the high school in Framingham, Mass. This school had been in operation but one year, having taken the place of the Framingham Academy. Its first principal, an excellent teacher, did not remain with the school long enough to fix its character. The labors of Mr. Hovey in this place fully justified the confidence reposed in his ability and fidelity. Says the Rev. Mr. Northrup, at that time chairman of the school committee of Framingham and now agent of the Massachusetts Board of Education:—"Mr. Hovey, when in Framingham, evinced great tact and untiring energy. He had the happy faculty of inspiring his pupils with his own enthusiasm, which was always fresh and unflinching. He seemed to impart his own spirit to them, and, by a sort of spiritual magnetism, win and attract them to himself. He had unbounded influence over his pupils, having won their affections and gained their confidence. Hence his government was both firm and kind. His authority was absolute, yet cordially accepted and freely and cheerfully assented to. The perfect order of the school, the prompt and cheerful obedience, the entire absence of all communications, all evince the accomplished disciplinarian. He had remarkable power to rouse the indolent, encourage the desponding, and stimulate his pupils to activity and exertion. His versatility of mind and ample resources enabled him always to interest his pupils. They still remember him with great interest and affection. One of them said to me, a short time since, 'Mr. Hovey was by far the best teacher I ever had.'" It may be well to add the testimony of a fellow-teacher:—"He was an *enthusiastic* teacher, generally much beloved by his pupils. I always liked him as a brother teacher. He was ready and willing to give assistance whenever called upon. I can remember instances when he rendered me great service, in so delicate a manner that no one else would have suspected his intentions. He organized a teachers' meeting this winter, also a literary society and debating club, which was popular and profitable. His purse was open to the wants of the school-room."

It is evident, from these and similar testimonies, that Mr. Hovey possessed the rarest qualification of a teacher—the power of drawing out the pupil, of provoking investigation, of *educating* the mind, in the primitive sense of that term.

At the close of this second year, Mr. Hovey left Framingham for Peoria, Illinois. Prior to 1850, this city had not been distinguished for school privileges. But during that year an association was formed by some of the citizens, to provide for the education of their daughters. A house was built, designed to accommodate fifty-six pupils,

and was so enlarged the next year as to receive twenty-five more. Fixed salaries were paid to the teachers, and an officer was elected by the stockholders to look after the general interests of the school and to act as treasurer. This school was quite successful; but the first building was destroyed by fire in 1854, and a new one erected large enough for one hundred and sixty pupils. The same year an association was organized for the purpose of founding a boys' school. Hon. Onslow Peters, whose name is held in grateful remembrance by all friends of education in Peoria, was president of this organization. A. P. Bartlett, Esq., now president of the City School Board, and J. W. Hassel, also a member of the present board, sought for a teacher, and, in the course of a visit to the East, engaged Mr. Hovey as principal of the new school. He did not, however, remove to the West until another step of great importance had been taken. Although his devotion to the work of teaching had been uncommonly earnest, he had, it seems, found time for other duties, and he was married, accordingly, October 9, 1854, to Miss Harriette F. Spofford, of North Andover, Mass., who was to be associated with him in the school at Peoria.

The two schools now entered upon a prosperous career. The people showed themselves ready to sustain every judicious measure with the requisite funds and with their moral support. Yet, while every thing was done on a liberal scale, no money was wasted, and no debts were incurred to embarrass the schools. The directors did not bend their rules to meet the wishes of truant boys and fault-finding parents, but undertook to encourage the faithful rather than indulge the delinquent. It was their aim to secure a thorough education to the pupils, and no murmurs at their wholesome regulations caused them to swerve from this aim. The wishes and efforts of Mr. Hovey were ably supported by them, and the success of his school was insured by their cordial support. Among those who contributed most to this result may be mentioned the names of Judge Peters and Mr. A. P. Bartlett.

Mr. Hovey had not been long in Peoria before he thought there was hope for the public schools. At his suggestion, an act was procured, in the winter of 1854-5, putting the schools under the control of the city. This act separated school interests from politics by providing for the election of a board by the people, which board had no connection with the city council. By an amendment, provision was made that one-third of the board shall be elected annually, thus keeping in office a majority of those who were familiar with the duties and previous action of the body. And it deserves to be noted that the very men who had taken the deepest interest in the stock schools sustained vigorously this movement for the public schools. Indeed,

the stock schools were soon merged in the public school system. The buildings occupied by them were purchased by the city, and a public high school was established, of which Mr. Hovey was the first principal. He was also superintendent of the city schools during a part of the first year of the new organization. At the close of this year he resigned the former office and gave himself to the labors of superintendency until the summer of 1857.

While in the stock school, Mr. Hovey organized an association of the Peoria teachers, by means of which new methods of teaching and management began to obtain in the schools. During his superintendency, they looked upon him as one "whose very presence cheered teacher and pupil; who knew just what teachers could do, and could appreciate their efforts where they were trying to do something."

The change thus effected in the school system and privileges of Peoria—a rapid and most gratifying change—was due, in a great measure, to the suggestions and efforts of Mr. Hovey. Said a prominent supporter of the stock schools as well as of the new system:—"We hired Mr. Hovey to take the boys' stock school, and, if he had taken no steps to bring about a change, he might have staid there till to-day." Yet the writer would by no means trace the establishment of graded schools in Peoria to the influence of one man. This great and beneficent result was secured by co-operation and public spirit on the part of the citizens generally, and by the energy and wisdom of a noble few who led off in the movement. While they suggested, others executed, and the work was done.

But Mr. Hovey was not allowed to confine his labors to a single school, city, or association. He had acquired a state reputation, and the outside drafts upon his time and thoughts were neither few nor unhonored. He engaged actively in all the great state educational movements then in progress, or about to be started; frequently traveling from fifteen to fifty miles after school to lecture, and returning in time for the morrow's duties.

As a speaker, he "talks right on," omitting all ornament, intent only on carrying his point. He often tells his audiences that he "can not afford to waste his time and theirs in reading figures of rhetoric."

The first regular meeting of the Illinois State Teachers' Association was held in Peoria, during Christmas week of 1854, and of course but a short time after his arrival in the place. "*The Illinois Teacher*" was started at this meeting, to further the educational interests of the state. It was published the first year at Bloomington, with a local and twelve monthly editors; but its list of subscribers was less than three hundred in all, and, at the meeting in Springfield, the next year,

(1855,) the question arose, "Shall we give it up, or try some other plan?" The result of discussion and conference was, that Mr. Hovey, who had been elected president of the association, was likewise appointed editor, responsible for the whole care of the journal, literary and financial. It seemed a desperate undertaking. The previous publishers merely uttered the general impression, when they published the remark that, "if Mr. Hovey had \$500 or \$1,000, which he wanted to throw away in a good cause, he had an opportunity." But by his own enterprise, with the aid of educational friends and good publishers, the "*Teacher*" soon had a respectable circulation of more than seventeen hundred. It was published, indeed, the first year at a pecuniary loss, the loss being increased by the burning of a number ready for issue; but the circulation increased to over two thousand, and there was a small surplus at the close of the second year, so that the editor was left unincumbered with debt, though with no compensation for his labor. The "*Teacher*" was now a paying journal.

By means of this monthly, Mr. Hovey and other friends of education advocated various measures adapted to raise the standard of popular education, and especially the establishment of a school for the training of teachers. As the fruit of these and similar efforts, essential changes were effected in the school law, and the principle of "free schools supported by taxation" was embodied in it. The sentiment in favor of a normal school gained constantly in depth and strength, until the popular will found expression in the normal school act of 1856-7.*

The act required the university to be located where the most favorable offer should be made; and, had not Peoria been compelled to compete against a grant of public lands to the value of \$70,000, the location must inevitably have been there.

It is but just to say that much the largest amount of ready money (\$50,000) was offered by Peoria, where the utmost enthusiasm prevailed in subscribing for the location. Owing to the deep interest which had been awakened in this city by the efforts of Mr. Hovey and others, all classes of men, from the wealthy banker down to the poor laborer in the street, were ready to give; and, had it been thought necessary, a much larger sum, it is said, would have been pledged.

But the institution was awarded to McLean County, in consideration of her donation of \$70,000 in lands and subscriptions by her citizens of an equal amount. In May, 1857, Messrs. Rex and Hovey

* At this time Mr. Powell was superintendent of public instruction, Mr. Hovey editor of the "*Illinois Teacher*," and Simeon Wright president of the State Teachers' Association and chairman of the committee of "lobby members" to the legislature, commissioned by the executive committee of the association to prepare and urge the passage of a bill creating such an institution.

were appointed "to visit various normal and high schools of the East, to report on the subject of building, internal arrangements," etc. Their report was presented June 28d, and at the same meeting Mr. Hovey was recommended by the committee on officers, and elected principal of the university. On the 18th of August it was resolved to hire rooms and open the school the ensuing autumn. This was accordingly done; and, on the morning of October 5th, Mr. Hovey and Mr. Ira Moore, with whose labors the growth and success of the school are yet identified, were in a large hall, ready for the pupils. To be sure the proper furniture of the hall had not arrived, and the number of pupils who came on that day was only *nineteen*, but the two men there in waiting for labor and success were not easily disheartened; the "blue days" passed, the furniture arrived, and the number of scholars increased to forty-five. Since the first term the school has steadily gained in numbers and in efficiency; the buildings are in process of erection, and the university promises to be henceforth a great and beneficent power in the state, raising the standard of qualifications for the office of teaching, sending forth annually a large number of skillful and devoted laborers, and kindling every where a deeper interest in popular education.

By his efforts as president of the State Teachers' Association, and as editor of the "*Illinois Teacher*," Mr. Hovey contributed his full proportion of influence to secure the founding of this noble university, and by his energy and skill as principal he is doing much to make it fulfill the end of its being. The sketch which has now been given of his life indicates his eminent fitness for the position which he occupies, proving as it does his great strength of purpose, his unwearied diligence, his devotion to the interests of sound learning, and his power to control the young and inspire them with his own enthusiasm.

V. APHORISMS ON TEACHING HISTORY.

[Translated from Ranmer's "*History of Pedagogy*," for this American Journal, of Education.]

1. Views on the proper mode of teaching history are exceedingly different, and even contradictory. Such oppositions in other departments of study are usually based upon the discrepancy between the old and new pedagogy; but in the case of history it is not so.

2. First, to define intelligibly the object of our discussion. Shall we teach history, in the widest acceptation of the term—what is called universal history, which treats of all periods and all nations?

Although history, under this name, is taught in most gymnasia, yet neither the instruction in it, nor any one manual of it, corresponds to this idea of it. For what text-book "includes all nations?" Are not the Americans, for instance, usually omitted? as well as most of the African nations, except the Egyptians, Carthaginians, and other nations of northern Africa, who were connected with the Romans? And how large a portion of Asia is altogether neglected!

3. This neglect is for two reasons. One is, that we know either very little or nothing at all of the history of many nations. This is the case respecting those of America. The other is, that we prefer not to know any thing of the history of other nations; or, at least, do not wish the pupils in our schools to be occupied with it. Thus, for example, the Indians and Chinese are scarcely mentioned, though there is no lack of historical authorities on these subjects.

4. But there is also a great distinction between the modes of treating such histories of nations as are included in our histories of the world; inasmuch as in some of them we go into much greater detail than in others. We give less fully the history of the Persians than that of the Greeks; of the Russians than of the English.

5. Universal history, in like manner, as we teach it, does not include all people of all times and countries, and it does not give the same degree of attention to those nations of whom it does treat. By what standard does it proceed in this? Is it according to dignity, so that the more enlightened nations are made more prominent, and those less so left in the background? This is by no means the only rule; for, if it were, the Hindoos, for instance, would fill an im-

portant place in it. For how high a position do they occupy in eloquence, poetry, mathematics, &c.

Why do we give so much attention to the Egyptians, for example, when the Hindoos were certainly not their inferiors?

6. The answer is this. In like manner as individual men take particular interest in the biography of their own ancestors, and of such persons as have exercised much influence upon their own training, employment, or labors, so does each nation take most interest in its own history first, and next in that of those nations which are related to it in language, manners, &c., or which have directly or indirectly exercised a great influence upon it.

7. In the history of what nations should we, as Germans, feel most interest?

First: in that of ourselves. History of our own country, ancient and modern.

Second: in that of the Jews, since salvation is of them, down to the time of Christ, and including the destruction of Jerusalem.

Third: in that of the Romans; to whose *Orbis* our nation formerly belonged, and whose influence is perceptible among us even now. Related studies are Latin, the *Corpus Juris*, history of the Catholic church, &c.

Fourth: in that of the Greeks; whom we recognize as directly or indirectly our instructors.

Fifth: in that of such ancient nations as were in more or less close relations with the Jews, Romans, and Greeks; as the Assyrians, Chaldeans, Persians, Egyptians, Phœnicians, Carthaginians, Arabs, &c. These are, however, not so nearly connected with us as are the Jews, Romans, and Greeks, and they are more distantly related to our character and history.

The history of most of these nations is previous to the time of Christ, and belongs to the ancient period.

The Hindoos and the Chinese have not, within the historical period, been either directly related to the Germans, nor in such close connections with any nation in proximity to us as would enable their influence to reach us through them; and thus, with us, they stand in the background.

Since the time of Christ, Europe forms one Christian whole. Still, the Slavic races are further from us than the Romance ones, or the German ones; not to mention still slighter shades of difference, as, for instance, the fact that, among the Romance nations, the Italians are sensibly more nearly related to us than the Spaniards, and they than the Portuguese.

8. These remarks may furnish a standard by which to adjust the

extent of the attention devoted to each nation in text-books and school lessons; which is the point to which I am to speak. The case is entirely different, when a historical investigator devotes his attention to some obscure national history, without any reference to its relations with his own country, and which is very properly omitted from school studies. For such a student the human race is one; and even those races, whose relationship to and connection with our own is hidden in the darkness of times long forgotten, come gradually astonishingly near to us. How unmistakably, for instance, does a comparison of Sanscrit with German point to a primeval unity of the German and Hindoo races.

9. After the object of historical instruction is determined—that is, what is to be taught—the question arises, How are we to set about instructing; what is to be our method? In this respect, also, is there the greatest variety of opinions among instructors.

In the first place, there is an opposition similar to that in the case of geography. The beginning may be made, that is, either with general or with particular subjects. In geography, for example, one begins with discussing and describing the whole surface of the earth; while another commences, as old Merian did, with describing single towns.

10. Thus, in history, a beginning may be made either with a sketch, of the most generalized kind, of the history of the world—we have seen what is to be understood by the history of the world—or with biographies of individual men.

Of these two extremes the first naturally induces the second. "What can boys do," ask some, with general history? They will learn names and dates of years, and nothing more. Where the scope of the subject is so great, the matters which are of most importance to youth, such as vivid portraits of individuals, great men, instructive occurrences, &c., can not be properly considered. We would, therefore, begin with the biographies of Alexander, Cæsar, Mohammed, &c.; and this method must certainly be more agreeable to the young than the general historical method.

To this the opponents of this method would reply:—"Did these heroes, whom you would describe, live as isolated appearances, in an age otherwise empty? Did not each of them belong to his nation? Can I comprehend Cæsar without knowing the Romans; or the Romans, without knowing the Greeks and Carthaginians? Shall I not therefore be obliged, in order to delineate my hero, to describe his nation; and indeed all the nations which were in close connection with it? And does not this, of course, bring us to the method of general history?"

I do not subscribe to either of these conflicting views: each of

the parties seems to me, however, to be right in its objections to the other.

11. In late years there have been those who have maintained that we ought to begin the instruction in history with that of the native country; since that is nearer to us than Greece, Rome, &c. This view seems at first so simple and natural that it attracts us; but, upon closer consideration, one who is moderately acquainted with the history of Germany would be slow to adopt it. Are not the most important periods of German history—such, for instance, as the mediæval contest between the popes and the emperors—of a character far too difficult for the intellects of boys? Do they not require, for even a moderate understanding of them, a comprehension of the science of church and state, and of their mutual relations? And other equally significant questions might be asked; as, for example, whether a boy of from ten to twelve years old is capable of understanding the movements of the Reformation?

12. I now turn from methods which I do not approve to the consideration of those which I consider correct.

The first beginning of historical instruction is, in part, coincident with religious instruction. Christ stands upon the bounds which separate ancient and modern history. Ancient history is related to him, lives in him; and he is the creator of the modern period, and will remain with us until the end of the world.

In this department we first become acquainted with the evangelists—the history of Christ—and thus acquire the capacity to learn aright, both in ancient history and modern, whither the former tended and whither the latter is tending.

Historical instruction proper I would commence with the Old Testament. My reasons are these:—*

1. Because the Old Testament history does not begin arbitrarily at any particular period, but at the beginning—the Creation.

2. Because this history is at once so simple and so vividly graphic. The persons and scenes of the Old Testament impress themselves involuntarily upon the mind. Its descriptions and narratives excite the children's imaginations to the forming of mental pictures, which remain in their minds, instead of merely passing through their memories, like mere names which have no actual existence. The Bible does eminently well what is required by the adherents of the biographical method of studying history.

3. Because the history of the Jews is a remarkably individualized one. It is the history of the people of God, chosen out and set apart

* It should be understood that, for the purpose of historical instruction, many parts of the Old Testament should be omitted, and left to be read at a maturer age.

from the heathen; and for this very reason it is more intelligible when separate from others—not incessantly referring to foreign nations, whose existence connects itself with its own, and thus requires some full knowledge of their history. This makes the mastery of it much more simple, and enables the attention to be directed, without divergence or confusion, to this one nation exclusively. This limitation of the subject is excellently adapted to the dimensions of the minds of school-children.

4. Because the history of the Jews is a theocratical one, in which the finger of God is visibly seen. God, to whom all his works are known from the beginning, the educator of the human race, often withdraws himself from sight in the history of other nations, as if he had given men over to themselves; and it is a characteristic of profound historical research and knowledge to look beyond the accidents of the time, and to recognize the justice of God ruling over the nations and over individuals. In the history of the Jews, on the contrary, the divine punishment follows sin, as the thunder does the lightning; while the blessings of the just—as in the case of David—fall visibly upon him and his posterity.

5. Because the Old Testament history not only reveals the true God in his justice, but also in his infinite mercy. While it relates the origin of sin, and with sacred impartiality reveals the sins even of men of God, yet it is a book of encouragement and of hope; because it every where points toward the coming Saviour.

Such a history furnishes the first point of view from which correctly to understand and estimate the history of other nations. It is the foundation—and even more, it is the living heart—of the history of the world. As Palestine was a land most isolated in situation, yet admirably adapted to become related to the Roman world, so the ancient Jewish history is a most individualized and isolated one, and yet contains within itself a living energy which enables it, at the epoch of Christ, to open out into a most comprehensive history of the world.

With the Old Testament are connected the histories of the Assyrians, Chaldeans, Medes, Persians, and Egyptians; for which, indeed, the Bible itself is one of the authorities. Daniel refers to Alexander the Great. The Apocrypha, with Josephus, fills up the gap between the return from exile and the time of Christ. And at this last point the history of the Greeks and Romans joins on to that of the Jews.

13. We now come to a point of divergence. Hitherto, history, entirely biblical, has been the same for all Christian children; but here there arise distinctions, depending on condition and sex.

Boys will either study for a learned profession, or not. The former

study Greek and Latin, and can and must be introduced to the sources of Greek and Roman history. These sources include not merely the historians, but all the classic authors; for they all characterize their nations.

Now, should the boys be carried through a detailed history of both the classic nations, omitting the classic authors, before they read the latter? By no means; but still they should study a brief outline of it, with reference to the future reading of the classics. This outline will serve to fix correctly their ideas in chronology, just as their previous geographical studies have done in space. But it is not intended that this portion of study should be completed during their attendance at the gymnasium.

The case is different with boys of the higher ranks, who will not study a profession, and with girls. These may study a more detailed history; since nothing can be left for a subsequent reading of the classics. But this history must still be written throughout in an easy and popular style, and must not demand any previously acquired learning in order to its comprehension. Both Greek and Roman history must be presented in their relations to the kingdom of God; and the opposite characters of heathenism and Christianity must be presented. A description of the Roman Empire at the time of Christ is of special importance.

14. We now come to modern history. Roman history forms the transition to it, belonging as it does to both ancient and modern times. Boys preparing for the university may study, for this, Tacitus; but not the writers on the Augustan period. At about the epoch of the Antonines begins a period, the original authorities on which are scarcely studied except by professional historians. How few are there who read Cassiodorus, Jornandes, the Byzantine historians, the Latin writers of the middle ages; how many, indeed, even understand the older and middle-age High German?

At this point, it will be said, come in the eminent modern historians.

I can not refer, for this purpose, to classic writers generally, as I did for ancient history. One reason for this is, that only a few among the modern writers are really able; and among these there are few, again, whose treatment of history is not quite beyond the capacity of youth. Such a one is Spittler, for example. A second reason is, that to read Herodotus and Sallust is an actual intellectual labor for the pupil; he is obliged to pay earnest attention to the course of the history to master his tasks. And it is only too commonly, on the other hand, that young persons read the German historians merely for amusement, very much as they seek

after romances, to pass away the time in indulging their imaginations.

The teacher, I say, should not refer to the modern historians as he does to the ancient ones; especially, not as if they were soon to be read in school. By this I do not mean that he should proceed as if they did not exist; he should give his pupils a sketch of modern history, as of ancient, with reference to the fact that they will sooner or later read the good German historians, and perhaps the English ones. This sketch should be fullest of our own history; and more or less so of the other European nations, according as they are nearer to or further from us, or have more or less interest for us.

15. The question will arise, How many facts, &c., should the pupil fix in his memory? I reply, first, Rather too few than too many. That is a very great error, into which teachers of history fall, of often laying upon their pupils burthens which they themselves could not endure. Instead of selecting remarkable men and occurrences, and giving the proper dates of them to be memorized, they torment the boys with a mass of minutiae "for future oblivion;" that is, which they will forget as soon as they leave the class. There is no better means than this for inspiring them with a most thorough disgust for history, and one from which they can afterward scarcely free themselves.

The opposite extreme from this cramming process must, however, be avoided—of being too kind to the boys, so as to make them inefficient and afraid of labor. There are teachers so tender of the boys that they are reluctant to make them commit to memory the multiplication table. Every one knows how easily the memory of the young receives and retains facts, names, and dates, unless, indeed, an unwise teacher has broken it down by unreasonable burdens or entire neglect. It is well known that, when this has happened, the sufferer, when grown up, can only with difficulty, or not at all, repair the damage thus inflicted. But we are in after years thankful to our instructors in history, if we retain from their lessons as much even as the succession of the German emperors and the length of their reigns; and are thus enabled so to measure our own historical studies as that we can proceed in them without having our mental processes interrupted by defects of recollection.

16. The more thought is bestowed upon the plan for historical instruction to be pursued in our schools, the more difficult will it appear to lay down any universal rules on the subject. And these rules should, in any event, be only of a most generalized character; and not such as to bind down the teacher to any course of details. The reason of this chief rule is, that historical instruction is eminently dependent upon the personal gifts of the teacher. Shall he, for in-

stance, make much or little use of a free, narrative method! Should he not rather select extracts from historians and read them! I reply, This depends upon whether the teacher has the talent of narrating—a very uncommon one. It supposes not only a man of historical knowledge, but the gift of narrating historical facts simply, lucidly, orderly, and fluently, without error or hesitation. And it also requires, above all, a clear and sensible mind, heartily despising that mere declamation for effect, which is only too often made a cloak for ignorance, and is well adapted to destroy at once the scholar's taste and his sense of truth.

If the teacher is skillful and conscientious, as few rules as possible should be prescribed to him, and it would be better to have none at all; for no one can properly claim to understand teaching better than the teacher himself, whose mind has been expressly trained and practiced in his calling as its proper field of labor. Such prescribed rules must, at best, be able to restrain mediocre and bad instructors from ruining their scholars entirely. If unskillfully made, they constrain and confound the best teachers.

17. We have very many text-books of history, from the briefest compends up to voluminous and detailed works.

The former are intended for school use; and furnish very brief, condensed sketches, which are to be filled out and made vivid by the teacher's oral instructions. The pupil, during his study, obtains from them the subjects which are to come up during instruction; and the manual serves, by means of recitation from it, as an aid to the memory, as the short entries in a memorandum-book do. These compends may be even without any style at all—in a tabular form.

Other compends pretend to possess a good and readable style, and that no additional oral matter from the teacher is necessary. They are calculated to assist persons studying without teachers, without any other aid. They claim, notwithstanding, to be compends; although, as a general rule, they embarrass the teacher who uses them, because they deprive him of the most important and interesting portions of his materials. The pupil who prepares himself from a compend of this nature is sated with the subject when he comes to the class, and the teacher's words have no interest for him. Indeed, the teacher can, in this case, at most, do no more than to give instruction, by conversation and examination upon prescribed tasks, out of the book, prepared by the pupil for each lesson.

Voluminous historical manuals are intended only for those who study without a teacher. They can not fill the place of compends in instruction.

18. There is as great a difference between historical compends for

men and those for boys as between a catechism and a system of dogmatic theology, or between a grammar for beginners and one for philologists. This difference consists not so much in the greater or smaller number of historical facts as in the selection of them; in its choice, for instance, of the more abstract civic and ecclesiastical relations, or of more pictorial representations of great men and occurrences. It depends upon the spirit in which the book deals with history.

A childlike and delicate tact may be exercised in the selection from the text-book of what is proper and comprehensible for beginners. The youngest pupils will prefer historical matter which is as near as possible in character to stories; they only gradually grow into a feeling for historical truth. Observe, for instance, what are the actual points of interest to children. They take pleasure in hearing of Marathon and Salamis, and of the campaigns of Alexander; but none in the contests between the patricians and plebeians of Rome, of the agrarian law, &c. They are not usually as much interested in Cæsar as in Alexander.* In brief, they are pleased with whatever stimulates their imagination by beauty, greatness, nobility, chivalric bravery, and adventurousness; but not with any thing that is cold or purely intellectual, such as the subject of civic relations and civil controversies. Such matters are repulsive to them.

There are compendiums, as well as teachers, who do not use sufficient care in observing what children like and can understand. We are now speaking, let it be remembered, of school-children, not of students, who have reached the verge of adult age and of civic life. These latter very properly require a presentation of the subject which does not merely seek to please by an exciting narrative, but which shall tend to direct and fix their minds in a knowledge of the true and serious nature of the approaching labors of their life as citizens, and for the great and solemn problems of human life generally.

We have thus discussed the beginning of the study of history. What, now, is its ultimate object—the purpose of all the labor bestowed upon it? What are the highest aims which we have in view in the lower as well as the higher stages of progress in the study? Let us prepare to answer by deciding a narrower preliminary question:—What do we desire to learn from the biography of an individual man? I reply, The problems of his life, and their solution. The history of the world is the biography of the human species—under which nations are the varieties. What are the gifts and the problems of humanity—of single nations? “There are many gifts,

* Of the Romans, children—like Livy—make a special favorite of the elder Scipio.

but one spirit." Whence do we come—whither do we go—we, all men, taken as one representative man?

When an individual dies, we ask, What has become of him? And millions and millions have, in like manner, died during the course of time, and what has become of them? History plays over graves; and future generations, like past ones, are all drawing toward the great necropolis. When will the dominion of death be ended? Does the end of Time—the beginning of Eternity—now approach, when they shall no longer be born or die?

The infancy of man is lost in the darkness of the past, and its future fate in that of the future. No man has investigated and understood death; and none has escaped over the limits of that unknown land from which no wanderer returns.

At this point Revelation appears, displays to us a part of the future, and opens to us the knowledge of our race—so highly gifted, so fallen away from God, and saved and forgiven through Christ. It encourages us as to the departed, and prophesies the resurrection of the dead and the Last Judgment. At this tribunal, love will be the rule of procedure; to him who hath loved much, much shall be forgiven.

What pride lost, the lowliness of Christ has recovered. With the crucifixion and resurrection of Christ began a new creation, the regeneration of a fallen and saved world, the establishment of the kingdom of God, in which all contentions shall cease. It is the kingdom of a love that shall never cease, because it is stronger than death.

VI. GEOGRAPHY.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

PESTALOZZI mentions a schoolmaster who instructed his scholars in geography so skillfully that they were well acquainted with the road to the East Indies, but very ill with the roads and paths about their own village. And Rousseau says: "I assert that no child of ten years old, who has had two years' instruction in geography, can, by using the rules which have been given to him, find his way from Paris to Saint Denis; or can even find his way about the curved paths in his own father's garden, without making a mistake. And these are the learned men who know, to a hair, whereabouts are Pekin, Iapahan, Mexico, and all the countries of the earth."* The reason of this practical incapacity Rousseau found to be that the children were taught maps only; the names of cities, countries, and rivers, which existed, for the scholars, only on the maps where they were shown to them. He advised, on the contrary, to commence instruction in geography by furnishing the boys with correct knowledge of the neighborhood of their own place of abode, and making them draw maps of it.

These views of Rousseau seemed the more reasonable to me, because I had spent years in geognostic researches among the mountains, and knew by experience the heaven-wide difference between a knowledge of a map and of a country. I composed a dialogue upon teaching geography, in which I set forth Rousseau's views in detail. The speakers were Otto and George. "Before I made my first tour to the Silesian mountains," says George, "I read over all that I could find respecting them in books of travels. The result of this reading was, that I formed in my mind so distinct an idea of those mountains that I could have painted them from these descriptions. I came among the mountains themselves; and, to my astonishment, the mountains of my imagination had no resemblance whatever to the real ones." And he says, again, "Permit me to add something further, in order to make my meaning clear. If any one inquires of you about the features of your room, or your house, you describe them to him according to the representation of them which is before your mind; not according to such a representation before your

* Second book of "*Emile*."

mind of ground-plans or elevations. If you are asked about a house in your neighborhood, you answer in like manner, not according to any representation before your mind of a plan of the city, but according to a representation—such as your faculties have made it—of the city itself; you say through what streets the questioner must go to reach the houses, and you point it out to him by shape, color, and peculiarities. And you can in the same way describe localities in the neighborhood of the city—unless you are an inveterate stayer at home. But how will it be if any one inquires of you for directions to a place say twenty-five miles distant? Will the picture of the road in that case still be clear before your mind, as it runs in through the fields and the woods, so that you can tell through what villages and over what waters it passes, how you must leave this mountain on the right hand and that castle on the left? Or will not your imagination in this case be at fault; will you not have forgotten many portions of the road, and have but an obscure recollection of others? May you not even have quite forgotten the whole road?" And when Otto answers, "This is the case for which maps are intended," George replies, "Then you must have within you the representation of the maps instead of that of the localities, and give your directions wholly from that, or else your recollection of the map will mingle in a confusing manner with that of the ground." And, at last, when the question is put, "How does the road run from your residence in Germany to Canton, for instance, or Irkutsk?" it appears that all representations in the mind of the extensive regions over which you must travel will quite disappear, and the representation of the map will entirely occupy their place.

Otto now calls attention to the necessarily limited extent of the knowledge of most persons respecting countries. No Titan, he says, is born, who can give information about the whole earth as fully as we can about our own homes and places of abode—who carries in his mind representations of all lands and nations. We must therefore make use of indirect knowledge, of some kind, in the place of direct. Whether this indirect knowledge shall begin with the district in which the learner lives, or the kingdom—whether with a smaller or larger area—is of but small importance.

George. What you say is like what I once heard alledged against the intuitional method in arithmetic, which Pestalozzi urged so earnestly. What is the use of it? asked its opponents; in the case of large numbers, all actual pictures of them must disappear from the mind. Who can imagine even a hundred apples? Away, therefore, with all intuitional arithmetic.

Otto. I agree with them.

George. I do not. I think the power of intuition should be developed as far as to the number ten, which can be counted on the fingers. So far the smallest capacities might attain. Then the tens, and afterward the hundreds and thousands, might be treated as units, and thus, by means of the wonderful decimal system, the most monstrous numbers can be dealt with. Without this intuitional knowledge, from one to ten, the children are liable to run into a mere course of juggling by means of the decimal system, without gaining a clear and intelligent knowledge of arithmetic.

Otto. And what is your application of all this to geography?

George. The numbers from one to ten are the boy's place of abode, the man's country; they are the Archimedean point in geography. He who understands them thoroughly may acquaint himself with other countries.

George now proceeds to explain how, according to Rousseau's system, the boys may be carried onward from the knowledge of, and ability to map out, the neighborhood—their home and its vicinity—to an acquaintance with foreign countries and the ability to describe them. During youth and manhood, he says, they may take journeys, especially within their German fatherland, and to countries most interesting to Germans, and may thus enlarge their direct knowledge of countries. But, he adds, how great soever their knowledge is, it can never include the whole earth; and this fact forces us to use substitutes—to supply the defect by means of a symbolical knowledge of the earth. And he explains this symbolical knowledge as follows:—

The sphere of the individual man is limited in space and in time; he can not exceed the measure of his bodily growth, nor add a single year to his life, nor do wings bear him over the earth. Yet his mind belongs not merely to the immediate present, but to a greater spiritual universe. Thus there is an incongruity between the wide aspirations of his mind and the limitations of his mortal body. The use of symbols is a mode of reconciling this incongruity.

There are two kinds of symbols; artificial and natural. The artificial symbol brings before the mind original ideas, by means of representations; while the natural sees the original idea in the parts of it. Permit me to give a brief illustration of these two kinds of symbols. You can represent Paris to yourself by plans of the city, panoramas, models, descriptions—by the most various kinds of representations, based upon an actual immediate observation of Paris. You see the city mirrored in another mind. These I call artificial symbols. But suppose you could remain for some time in some house in Paris, without leaving it. You would see and hear from your

window the various noise and haste, the running, and the outcries of laborers and tradespeople, the mountebanks and marionnettes, cabs and water-carriers, national guards and chestnut-sellers, cobblers and fishwives, and thus, by your observation of a small part of the city, you would obtain a knowledge of it as a whole, by the method of natural symbols. *Ex ungue leonem.*

Now put the earth in the place of Paris. We have all manner of representations of it: globes, maps, reliefs, pictures, and engravings of localities, cities, and buildings, descriptions of all countries, and general descriptions, compiled from the descriptions of individual immediate observers. These representations are, some of them, of late invention, such as reliefs and panoramas; and in part they have been so improved, within the last century or two, that they must now be treated as entirely new subjects—as is the case with maps.

Thus there has arisen, during these last centuries, a most earnest and thoughtful endeavor to create, by means of these various representations, a new earth on the earth—the greatest of all artistic efforts. To this end point the untiring zeal shown in collecting beasts, animals, and minerals from all parts of the world; and the investigations of all the nations, their languages and manners. Who can tell how far this unwearied zeal will go? As man's susceptibility to impressions increases by early travels within his own country, and at the same time his own powers of representing, and his capacity for comprehending the representations of others, which again are on their part becoming more and more perfect, who can tell to what a degree of broad, general comprehension of the whole earth one can attain who is acquainted with his own country, by means of intercourse and artificial symbols?

In describing natural symbols, George says:—

As at Paris you would become acquainted with Paris itself by looking out of your window, and not with a representation of it—learning the whole from a part—so should you gain from your own country a knowledge of the whole earth; this portion of the earth should be to you a symbol of the whole of it. Do not the sun, moon, and stars shine upon your own country as they do upon all the rest of the world? Does not the magnetic needle, that living representative of the earth's magnetic axis, point to the north before your eyes? Are not the mountains of your own country constructed almost exactly as are those of all other parts of the world; and are not her plants and animals the same, or of the same species, which are found throughout a great part of the world? Open your eyes, and your own home will be seen to be as a new paradise, having gathered together in it all the creatures of the earth. Learn, however,

first of all, to know and love your own people; and this will lead you to the comprehension of humanity as it exists throughout the whole earth. Thus direct knowledge of your own country is an object in itself, and affords the means of understanding representative descriptions of the earth—the geography of artificial symbols—while its thorough development also forms a basis for the geography of natural symbols, which shows, in our own country, the features which characterize the whole earth.

Four years after writing this dialogue, I went to Nuremberg, and there taught geography for the first time. The question came up, whether my views in this department of instruction, based upon Rousseau's, would stand the test of practice? And I must confess that they did not.

Taking walks—an aimless wandering about the neighborhood—was very pleasant to the boys. But when a definite purpose was contemplated in these walks—when the boys were made to gain correct knowledge in them, consciously and of purpose, and were again made to use all their knowledge in drawing a map, all their enjoyment of the walk was at once destroyed. Instead of being a relaxation and a relief from the school-lessons, they became merely peripatetic lessons themselves. This dislike of theirs proved to me clearly that my theory of geographical instruction was wrong; and I gave it up.

I afterward, however, attained my purpose of making my pupils use a knowledge of their abode and its vicinity as an introduction to the understanding of maps, and even of the globe, in a manner apparently similar to that which had failed, but really very different. During the geographical instruction which I gave in Erlangen, I began, for instance, with a large plan of the city. The pupils examined this with the most lively interest, and picked out all the streets, their own homes and those of their acquaintance, and the churches and other public buildings. They could not satisfy themselves with looking, and their researches had no end.

After this I gave them a large and very fully detailed plan. On this the city itself was, of course, smaller than on the first plan, but was still clearly laid down. The pupils now first carefully compared the two representations of the city, and observed their resemblance, and how they differed only in the difference of their scale.

They then looked out upon this map all the neighboring localities with which they had become familiar during their walks, and followed the roads from the city to one place and another, vying with each other in the exercise. Those who were less accurate in their

knowledge afterward of themselves directed their excursions to points not known by them, and others searched out new routes. Without my having at any time imposed this acquisition of correct knowledge upon them as a task, they came at last to have a good knowledge both of the localities themselves and of the map of them. The map did not become, what Rousseau finds so much fault with, "a mere set of marks, without any equivalent conception in the mind of the thing represented."

After this map of the neighborhood of Erlangen, I placed before them one of Middle Franconia. The area of the last map occupied but a small space on this. But, on the other hand, it included a much larger surface; and the pupils could pick out upon it Nuremberg, Fürth, Forchheim, Bamberg, and other places which they knew, and also the villages, &c., which they had observed on the roads to these larger places.

I need not add the details of the course by which I went on to exhibit Middle Franconia as but a small part of Germany, that as one part of Europe, and Europe as one part of the whole earth.

Even while the pupils were occupied with the neighborhood of Erlangen, I at the same time began to instruct them, in the simplest manner, about the cardinal points, the rising and setting of the sun at different times of the year, and its place at noon. Those city streets which ran north and south, and over whose southern ends the sun thus stood at noon in summer, were of great assistance in this course of instruction.

I am here only discussing the first beginning of geographical instruction. If now it be inquired, Why is this method adapted to beginners, and not the systematic examination of localities and map-drawing along with it? the explanation is to be found, as I have already shown, in the dislike of children to what is purposeful and methodical. In the school, they are satisfied to have every thing go on in the fixed routine; but they think it unendurable and even unjust to apply school discipline to their whole lives, and even to their walks. And, moreover, it is natural for beginners to prefer good and well-drawn maps to the imperfect and ill-looking ones which they scratch off with so much pains and weariness. And, again, when they find out, as by my method, that they have been acquiring knowledge in taking walks, they are as delighted as was M. Jourdain in the "*Bourgeois Gentilhomme*," when he found out that he had been talking prose all his life without knowing it.

After having made a beginning in this way, I was at a loss to know what geographical text-book to use in my subsequent instruc-

tion. In most of the older manuals I failed to find a proper arrangement, either in general or in the description of particulars; and many of them were also faulty in selection of materials, and in the proper proportions of it.

The lack of proper general arrangement appeared most prominently in the fact that the authors had not sufficiently distinguished between what is proper for a universal geography and what belonged to a description of particular parts of the earth and countries.*

To illustrate the extreme want of good order in describing subordinate portions of the earth, I give the following enumeration of German mountains and lakes, which I request the reader to follow on a map: "The principal mountains are, the Harz, (Brocken, 3,495 feet high;) Schwarzwald, (Feldberg, 4,610 ft. ;) the rocky Alps, the Rhaetian and Noric Alps, (Orteles or Ortles, 14,814 $\frac{1}{2}$ ft.; Grossglockner, 11,982 ft.; Hochhorn, 10,667 ft.; Platey-Kugel, 9,748 ft.; Watzmann, 9,150 ft. ;) the Carnic and Julian Alps, (Terglou, 10,845 ft. ;) the Fichtelgebirge, the Schneeberge, 3,468 ft.; the Kahlenberg, the Birnbaumerwald, the Sudetic Alps, and Riesengebirge, (Riesenkoppe, 4,950 ft. ;) the Moravian mountains, (Spieglitzer Schneeberg, 4,280 ft. ;) part of the Carpathians, connected by low heights with the Moravian and Sudetic chains, the Thuringian mountains, the Erzgebirge, the Spessart, the Rhone mountains, the Böhmerwald, (Rachel, 3,904 ft.; Arber, 4,500 ft. ;) the Wesergebirge, Westerwald, Odenwald, Ardennes, Vosges, Hunsrück, &c. Lakes: Lake of Constance, (seven miles long, three miles broad, and more than three hundred fathoms deep;) Chiemsee, Lake of Cirknitz, the salt and sweet lake of Mansfeld, the lakes of Mecklenburg, Brandenburg, and Pomerania, the Dümmersee, the Traunstätter and Hallstätter in archducal Austria, the Steinhuder Lake," &c.

Nor is this example of confused and disorderly arrangement from the earliest best geography, but from the favorite manual of Stein, which has been translated even into Polish, and from the fourteenth edition of it.

But many geographical manuals are also deficient in proper selection and proportion of materials. They contain unimportant matter, and omit the most important. Murray, for instance, in his description of Cologne, mentions Farina's *eau de Cologne*, but not the cathedral. They sometimes contain statements of results in natural science which are quite problematical or even altogether inadmissible—such as youth should not be informed about. They should receive, as far as possible, only what is entirely true.

* I have expressed myself more fully on this point in my review of Murray's Geography, reprinted in my "Crusades," (*Kreuzzüge*) Subsequent examples will illustrate the point.

It is also often the case that geographers quite fail in an accurate understanding of their subject, and of the limits between it and the provinces of other sciences; for the idea of geography is entirely different from what it was in the time of Busching. It is in our time as if all the arts and sciences had appointed a rendezvous with geography for a great family feast on occasion of the first discovery of their relationship. Here gather astronomers, physicists, botanists, zoölogists, mineralogists, philologists, statisticians—who can enumerate them all!—bringing the fruits of labors too vast for description, to throw them all into one great common structure. They seek to gather together every thing which the wide earth offers, so that it may be seen and understood.

It is accordingly of great importance to observe a proper proportion among all these, and to select judiciously; so that the geography shall not come out a hydrology, zoölogy, nor mineralogy; so that in general no department shall exceed its proper limits. That many fail in this respect is shown, for instance, by V. Hoffmann's geographical writings. In his work "for all classes," entitled "*Germany and its Inhabitants*," (*Deutschland und seine Bewohner*), the description of the Rhine and its tributaries occupies sixty-three pages; and he mentions 481 streams in the valley of the Rhine, 337 in that of the Elbe, 215 in that of the Oder, 487 in the German part of that of the Danube. In his "*Europe and its Inhabitants: a Manual and Reading-book for all Classes*," (*Europa und seine Bewohner: ein Hand- und Lesebuch für alle Stände*), he gives a list of measured heights of land, and of uninteresting lengths and breadths, occupying no less than 191 pages. In the same work, intended "for all classes," he gives a hundred pages of Latin names of animals to be found in Germany; as, for instance, of 85 tape-worms, 54 snails—such as *Helix holosericea*, *H. Olivieri*, *leucozona*, &c. In this way school geographies are filled up with Latin names of plants and animals which the boys have never seen and probably may never see; and the author flatters himself that he puts forth an intelligent method of instruction and natural science, and good intuitional exercises.

I wrote, in 1831, a manual of general geography; in which I endeavored, as far as possible, to supply these deficiencies of my predecessors. Future writers will, in turn, supply my own.

At the same time, I published a "*Description of the Earth's Surface: an Introduction to Geography*," (*Beschreibung der Erdoberfläche: eine Vorschule der Erdkunde*,*) for beginners; and made use of it in giving instruction subsequent to that which I have already

* This was extracted from the second part of the manual.

described. In this I begin with some very simple lessons in mathematical geography, especially respecting the sphericity of the earth, the ideas of axis, pole, equator, parallel, latitude, longitude, tropics, polar circles, and zones. Then I briefly discuss maps, and show how these either represent the whole earth or parts of it; and how the degrees are marked upon them. I have found it very useful here to compare some maps with a globe. I ask such questions as, for example, What country is that, which extends from the 9th to the 21st degree of longitude, and from the 36th almost to the 44th degree of latitude? Or, In what country do the meridian of 40° and the parallel of 37° north intersect? And the pupils can put similar questions to each other.

When I have proceeded from the city-plan of Erlangen as far as to the globe, and have connected with it the instruction above mentioned in mathematical geography, I take up my "*Description*," together with the well-known and excellent maps of Sydow. In this work of mine I endeavored, as far as possible, only to deal with general subjects, and to consider together only things properly related. What I mean by this is sufficiently indicated by its opposite, as shown in the list of German mountains from Stein. I will, however, add an illustration. The description of seas* mentions five principal ones; and all others are given as dependents of these five. I consider in a similar manner the mountains, which are usually treated as if entirely isolated, and having no connection with each other. Such, for instance, is the case with the mountains surrounding the Bohemian Elbe valley; and the chain of mountains which, under various names, runs from Calabria to the Peloponnesus, and sends out a branch from Macedonia to the Black Sea.

This principle, however, appears most clearly in the case of the rivers. Under the old arrangement, when the political divisions of the earth's surface were also used in classifying the descriptions of mountains, rivers, &c., the Rhine, for example, had to be mentioned in the descriptions of no less than twenty-two countries and small states; and the student was left to put together for himself, as well as he could, a single picture of the river, out of these twenty-two scattered notices. And, again, if we are to consider as one, and in one description, not merely the whole Rhine, from its sources to the North Sea, but also all its tributaries—the Neckar, Main, and Moselle, and the smaller streams again which run into these, as the Kocher, Jaxt, Regnitz, &c., we should, in this case, mention the extent of the domains of kings and princes, but only the great domain of old King

* Not including inland lakes.

Rhine himself.* My description names the most important towns on each bank of each river: there are comparatively few important places which do not stand on a river.

This book is as brief as it could be made without making it unintelligible; with the intention of not depriving teachers who should use it of the most attractive portions of what they might themselves add to its information, such as fuller details in the character of rivers, mountains, &c.

The book, so far as it is to serve the purpose of instruction, is a description of maps; and it was necessary that these should agree with it. But, as it appeared, this was not the case, as the maps usually employed in the schools adhered to political divisions, while my "*Description*" neglected these and proceeded chiefly by mountains and rivers. It was very inconvenient, for instance, to follow out the Alps on the separate maps of Italy, Switzerland, Germany, &c., and the more so as these maps were mostly drawn to different scales. This difficulty is avoided by Sydow's maps. When the pupil has obtained, by means of these, a general view of the waters, mountains, and levels of the whole earth, he may then, for the first time, begin to use maps with political divisions. With the aid of this they may first give the boundaries of some particular country;† and then mention which of the mountains, rivers, &c., which they have been studying about, belong in whole or in part to that country. Thus, to France belong the whole of the Cevennes, the northern side of the Pyrennees, and the western of the Ardennes; of rivers, the Seine, Loire, &c., entirely, but the Rhone, Moselle, Maas, &c., only in part. Of the French cities which are important enough to be taken notice of by a beginner, most have already been mentioned in the previous study of the rivers; as Paris, Rouen, Bordeaux, Lyons, in following the course of the Seine, Garonne, and Rhone.‡

Oceans, mountains, and rivers are elements of geography which go back to a period quite beyond human history. Cities are the most ancient monuments of men. Abraham saw Damascus, and lived near Hebron; Jerusalem existed a hundred years before David; Rome is in the third thousand of its years. Whatever revolutions happen, in the course of time, to nations—their abodes, and boundaries, and dominions—cities outlive almost all changes; only a comparatively small number of large ones—such as Babylon, Persepolis, Palmyra,

* Schenkendorf calls the Rhine

"An ancient monarch, nobly born."

† They should also give its length and breadth in degrees, using at the same time the globe, which has been used, as I mentioned, in the first beginning of mathematical geography.

‡ The few other important cities, such as Marseilles, Toulon, &c., may be added at this time.

and Carthage—being quite given over to desolation. Our own country exemplifies, within a smaller space and time, the same relation of cities to history. Mentz—first Roman, then the seat of archbishops and electors, then under the French dominion, and now Bavarian; Treves and Cologne—earlier Roman towns than Mentz, afterward the seats of archbishops and spiritual electors, and now Prussian; &c.

These ancient cities, then, which have survived the changes of time, and the seas, mountains, and rivers, which existed before man, are the permanent monuments with which it is of inestimable importance that pupils should become acquainted, for the sake of all their subsequent historical studies. They will thus readily understand the geography of the ancient historians. When they see the maps of ancient Gaul, Spain, &c., they will at once recognize the Arar as the Saone, the Matrona as the Marne, the Bætis as the Guadalquivir, &c.; Rotomagus as Rouen, Lugdunum as Lyons, Cæsarea Augusta as Saragossa; Abnoba Mons as the Black Forest; &c.

The geographical instruction thus far described is either immediately concerned with actual intuition by the senses or is closely connected with it. In this way the pupils have gained a knowledge of the seas, mountains, plains, rivers, and lakes, and the most important countries, and their boundaries, mountains, rivers, and cities. It is now time to give them a brief and clear description of the various races of men, languages, religions, and forms of government.

After all this, there remains but little to say of the description of particular countries—that is, of what particularly characterizes each individual country and nation, and distinguishes it from others. Here is the first place where more detailed descriptions of the principal cities can properly be given; pictures of them being used where practicable. But nothing should be protracted too far.

In this manner, according to my view, should the foundation be laid for future geographical and historical studies. These, again, may be carried further and relieved, by the reading of good travels, newspapers, missionary reports, &c. The pupil will now find his own knowledge so confirmed that he can proceed with no further aid, if he has good maps. He will also find himself sufficiently at home in any part of the earth to understand its ancient geography.

But all this fixation and extension of geographical knowledge is chiefly gained by means of books and maps. It is only in the first commencement of it that we make use of any immediate knowledge of a very small part of the earth's surface—namely, of the pupil's place of abode, and the vicinity of it.

It may be asked whether then I have wholly given up my earlier views, above described, on the method of instructing in geography? By no means. I only convinced myself, as I have shown, that the practice of draughting the neighborhood of home, with which that method begins, was not proper for beginners. Older scholars, who have gained a knowledge of drawing, may, however, practice it with advantage. But this prosaic method, as I may call it, of observing and delineating, should always have a poetic side; it should be made useful in instructing the pupil to draw landscape from nature, and especially to gain facility in sketching.* If travels in Germany and in such other countries as are most beloved by and interesting to us Germans are the best preparatory school for understanding all the countries and people of the earth, the young must be made ready for these travels by the acquisition of such knowledge and accomplishments as will be of most service in them. But landscape drawing and architectural drawing occupy an important place among these.†

An adult person, desiring to know what further knowledge and accomplishments are useful to those who travel, would ascertain to the best advantage from reading the travels of distinguished writers, like Goethe, Humboldt, &c. The acquirements of these men are shown by what they accomplished.

Here I pause. Having thus endeavored to trace the course of geographical study from its very first rudiments, I refer, for the ultimate aims of geographical study, to what I have extracted from my dialogue on geography, already given.

* I have given my views more at large on the relation between landscape painting and map drawing in the first part of my *Miscellaneous Writings*, p. 29.

† Unfortunately I am no draughtsman. In order in some measure to supply this deficiency, I used, while among the Silesian mountains, to make out from elevated points a sort of panoramas, on which I entered, with the aid of a compass, the names of mountains, towns, &c., in their proper directions, putting the furthest further and the nearest nearer from my own position in the center of the paper. These panoramas frequently proved each other's correctness. If, for instance, I had laid down Mount B. south-east from Mount A., then, in drawing from Mount B., Mount A. would be north-west of it.

VII. INSTRUCTION IN NATURAL SCIENCE.

[Translated from Reumer's "*History of Pedagogy*," for the American Journal of Education.]

INTRODUCTION.

I PRESENT here materials both new and old. I printed some essays on instruction in natural science as early as 1819 and 1822, in the first and second volumes of my "*Miscellaneous Works*," (*Vermischten Schriften*;) and in 1823 I wrote a programme "*On Instruction in Natural Science in Schools*."

Although, during an uninterrupted course of teaching since 1823, I have made new experiments, and have had occasion here and there to seek out and to open new paths, yet my original views on the subject have not substantially changed.

Even during the period of my own studies, I felt a repugnance to the usual course of this instruction. From 1805 to 1808, I heard lectures on mineralogy in Freiberg, from my never-to-be-forgotten teacher, Werner. His school has scarcely its parallel; pupils came to Freiberg from all parts of Europe, and even from Asia and America. And from that school what men have proceeded—Alexander von Humboldt, Steffens, Novalis, Schubert, Weiss, Mohs, and how many more!* Werner's oral delivery was a model of lucidity and order; and his descriptions of mineralogical species left nothing to be desired. But when he had described perhaps ten species, and had scarcely a quarter of an hour left, he would have the cases which contained these ten groups opened on the table before us. It was a very torture of Tantalus, to gaze with straining eyes at these, endeavoring in so short a time to obtain a distinct impression of the appearance of so many different species. To do this, indeed, was impossible, even for the most ardent and attentive learner; and they would have gained, not an actual knowledge of minerals, but only fragments of it, had Freiberg afforded no other means of acquiring it. But traders in minerals came there from the most distant countries, and of them the students, amongst whom some were usually quite rich, purchased. Every one had a larger or smaller collection of minerals; and they showed their treasures to each other, and talked about them, and

* While I was in Freiberg I ate at a boarding-club, which consisted, besides us Germans, of a Swiss, a Frenchman, a Roman, a Spaniard, and three Russians, one from Nertchinsk, which is near the Chinese boundary-line.

studied them together. But this was not enough. After, therefore, I had attended the lectures twice, I engaged private lessons from Werner, merely for the sake of going through his excellent collection under his direction. When, in 1811, I was appointed professor of mineralogy at Breslau, I saw that, under the circumstances of that situation, I must pursue a different course from Werner's, and must proceed as much as possible by the way of intuition, and keep the oral part of my instruction in the background, in order that my pupils might gain some actual mineralogical knowledge. For Breslau offered none of the outside assistance which was accessible at Freiberg; the academical collection being the only one from which the students could gather any information.

I shall hereafter describe the method to which I resorted. Besides the students, I had other hearers also. I offered to the rector of the Breslau Gymnasium to instruct any of his scholars who might have a special taste for mineralogy, and had the pleasure of always having some gymnasiasts under my teaching during my eight years' stay there; and my experience in Göttingen was similar.

I was transferred, in 1819, from Breslau to Halle, where I taught on the same plan, and also gave the mining pupils practical lessons, in the neighborhood, in the mode of examining mountains. In 1823 I left Halle and went to Nuremberg. Here, as instructor in a private school, I had an opportunity of instructing boys of from ten to fourteen in mineralogy, and had the use of a good collection for the purpose. I also endeavored to make my pupils acquainted with the vegetable kingdom, by the method which I shall hereafter describe.

I received my present appointment to the professorship of natural history and mineralogy at the University of Erlangen in 1827. Here I taught mineralogy to the gymnasiasts in the same manner which I had previously made use of; but to the students in a somewhat different one. Instruction in general natural history was a somewhat novel employment for me. It was evident that in this department I could not, as in mineralogy, begin with the observation of nature herself. How could this be done, for instance, in mathematical and physical geography? It was a matter of course that, as things then were, oral instruction must be the principal resource, notwithstanding that very many points might be made as clear as possible to the senses by means of exhibiting natural objects, pictures, maps, models, &c.

So much I have said by way of preface, to give the reader a general view of the course which I pursued in learning and teaching natural history; and to make it properly clear that mineralogy was my chief object.

I. DIFFICULTIES.

The teacher of natural science might well turn dizzy when he considers the vast compass of his subject, and the mental power and exertion which they demand.

Their extent is increasing daily. Where Hipparchus and Ptolemy saw 1,022 stars, Lalande and Bessel saw 50,000; where the Greeks and Romans knew 1,500 species of plants, Stendel's "*Nomenclator Botanicus*" for 1821 gave 39,684, and its second edition, in 1841, no less than 78,005, without reckoning the cryptogamia. Thus the number of botanical species has nearly doubled itself within twenty years. In zoölogy there has been a similar increase. The twelfth edition of Linnæus' "*System*" included about 6,000 animals, while Rudolf Wagner, in 1834, enumerated about 78,000. The greatest German mineralogist, Werner, who died thirty years ago, in 1837, would not now know the names of more than one-third of the species of minerals now recognized.

In physics and chemistry there has been a similar growth. This can not be so well expressed by numbers; but almost any one can recall many of their doctrines, of which nothing was known a hundred years since.

The teacher, in casting his eye over this broad ocean of knowledge, might well despair of being able to fix upon a beginning, a path to pursue, and an object to aim at, for his pupils. And this despair might well increase, on considering how far scientific training is carried in these various sciences, and what demands are made both upon pupil and teacher. In most branches of natural science—including the higher ones—mathematics holds the scepter; and to him who is not master of that study the gates of their paradise seem to be entirely closed.

II. OBJECTIONS TO NATURAL SCIENCE IN THE GYMNASIUM ANSWERED.

But these difficulties in the nature of the study are not all. Still others, raised by the adversaries of natural science, arise against its pursuit in the gymnasium; and of these we shall now speak.

Unless, say these adversaries, you propose to claim, with Jacotot, that we ought to be able to teach what we do not understand, you must admit that instruction in natural science must be given up, for the reason that there are no teachers who understand it. We answer, It is not to be denied that heretofore the incapacity in this department of many teachers has been plain enough. Without any knowledge of minerals, plants, or animals, they all lectured to the boys out of Raff's or Funke's natural history, made them commit to memory the descriptions of animals, &c., and then questioned them on them. But men always generally escape from such errors as this.

Our hopes of obtaining competent teachers of this department are increasing, because attention has of late been earnestly devoted to the purpose, and because there have been established in the universities, for those who devote themselves to mathematics and natural science, seminaries, corresponding to the philological seminaries.*

But, rejoin our opponents, even supposing that teachers of natural sciences have been trained thus, what good can they do as long as the gymnasia are destitute of the necessary means of instruction? Have you any expectation that, in times so troubled as the present, and when demands are made upon the income of the state from so many quarters, collections in natural history, physics, &c., will be given to our gymnasia? Let us be rejoiced if our universities are furnished with all these means of instruction.

Such objections as these are based upon the mistaken idea that all instruction in natural science is superficial unless it is carried to the greatest extent. For the apparatus of instruction must be richer, better, and more costly, in proportion to this extent.

But no such scope in this department is proper for the gymnasia; and that very scantiness of apparatus, of which so much complaint is made, would actually sometimes be a benefit, by constraining teachers to moderation in pursuing these studies.

To give an example:—The course in botany could be abundantly furnished for all necessary purposes from the flora of each neighborhood. No forcing-house, not an exotic plant, would be requisite in addition. Nor is any place destitute of gardens sufficient to enable the scholars to observe the growth of plants, from their first sprouting to the blossom and fruit; a study worth more than a knowledge ever so thorough of the "*Philosophia Botanica*." And, in like manner, every place has its fauna, in its domestic animals, first, and in others. It is most difficult to furnish the needed materials for mineralogy; as, in this study, crystals are required. But even here good specimens can be obtained, with very small means, of the species which occur most frequently, such as quartz, iron pyrites, lead ore, &c.† There may often be found, again, in chemical laboratories, apothecaries' shops, &c., very fine crystals, costing very little, as of alum, &c. Lastly, many gymnasia might obtain assistance from the universities, by gifts of duplicates, &c., from the overplus of the collections of the latter. From the duplicates at Breslau, I furnished small collections, at a very moderate price, to thirteen educational institutions.

But these considerations would not comfort the opponents of nat-

* Such a one was established at Bonn, in 1825; a second, in 1836, at Königsberg; and a "Seminary for Real Teachers," at Tübingen, in 1838.

† Particularly if small specimens are used.

ural sciences in the gymnasia; they would now come out with their real meaning—the reason of their reasons. The business of the gymnasia, they say, is properly classical education, by and for the classic authors. This requires so exclusive a devotion of all the time and powers of the student, that none can remain over for instruction in natural science. Education should not give the scholar superficially universal learning; it is better for him to learn one thing well than a heterogeneous mixture of many things badly.

This view I have already controverted in my account of Sturm and his gymnasium. This teacher, with the utmost professional skill, was led astray by the idea of our opponents. He taught Latin, and almost Latin only. Greek was next; and no instruction whatever was given in Hebrew, German, modern languages, mathematics, history, geography, natural science, or drawing. The simplification can not be pushed further, nor better managed; and yet Sturm complains of the small results obtained.

One thing well is better than many ill; but the accent should be laid on "ill," not on "many." In the gymnasia, many things can be taught with great success, if it is done in the right way, at the right time, and in the right proportions. And, on the other hand, a man may limit himself to one thing, and teach that ill; as, for instance, if he teaches Latin only, and that with the design of enabling his pupils to speak and write it as if it were their mother-tongue.

The universities, say our opponents again, should afford the necessary means for those who desire to become acquainted with natural science. Doubtless they should, but not for elementary scholars in that study. They furnish the means for the higher philological studies, but do not undertake to teach beginners *mensa* and *amo*.

It is the more proper that the gymnasia should instruct in the elements of natural science, because boys are much better adapted to those studies than youths or men. How easily and firmly do recollections of plants, animals, and minerals impress themselves upon the mind in our earlier years; and how strongly is a child inclined to make himself acquainted and familiar with every thing which surrounds him! But with the elements of Latin it is wholly different. These have no excitement for the boys. And for the very reason that the material world is so stimulating to him, and occupies him so much, is it so hard for him to busy himself exclusively with the more intellectual elements of language. Let them now be compelled in that direction which is opposed to the tendencies of their child's natures. Will not such a measure result in their becoming unnaturally warped in mind, and ultimately insensible to all the beauty of the

heavens and the earth—and to all the beauty of the classics, too? For to feel the latter there needs a training of eye and ear to elevated enjoyment.

I have mentioned that I instructed gymnasium pupils in mineralogy in Breslau and Erlangen. These usually attended at 11 A. M., at the end of their morning-lessons. It may be imagined that they came so weary as to be disinclined to attend. Very far from it; they came punctually, and of their own free will. They took hold of the study with all their hearts; and indeed showed in most cases far more disposition to like it, and clear comprehension of it, than many older than they. It was here that I learned how well the rudiments of natural science are adapted to boys, and that, when they have been working hard at their studies in language, it is a proper and natural impulse which leads them to refresh and recreate themselves by studying crystals and flowers.

A writer on natural science has required that each pupil should, at least, bring with him to the university a few thousand names in natural science—expressions being by this, of course, intended for correct ideas in natural objects. Without pretending to fix on any precise number, this at least is certain, that, to students possessed of such a supply, lectures could be delivered of a kind very different from those which must now be delivered—lectures which would deal with generalized views, and would treat profoundly of their subjects. The gymnasias must bear the blame of the fact that the universities have to instruct in the very A B C of natural science. If it be asked in what classes of the gymnasium (including the Latin schools) instruction in the natural sciences should be given, I reply, In the lower and lowest; for experience has shown me that the younger boys are capable of retaining ideas of minerals, plants, and animals as well as, and usually even better, than youths.* And these beginners in Latin, whose school-life is all effort and labor, need something in the nature of refreshment more than any other scholars. It is not until they comprehend the classic authors that they find a pleasure in their studies in language.

But teachers in languages are apprehensive that adequate instruction in natural science will render their boys averse to the former study, not to mention the time that would be occupied. Experience has, however, convinced me of the opposite. Those pupils who distinguished themselves in my mineralogical classes were also among the foremost in the gymnasium.

* The case is different with those departments of natural science which require mathematical knowledge, and do not so much depend upon the intuition of the senses. These—mathematical geography, for instance—should only be taught in the higher classes.

The fear that the study of natural science will render the pupils averse to that of languages can have no substantial basis, except when it is made a mere superficial diversion, instead of a serious and thorough study. In this latter case it does not seek merely an unintelligent communion of the senses with the material world, but the development of words, as an intellectual blood, from silent examination; an adequate translation of intuition into words. In this way it has the greatest influence upon thorough cultivation in the mother-tongue; a cultivation which proceeds from things themselves. And, as the poet says, the mother language is the mother of languages; what is useful for the former is indirectly favorable to the acquisition of the others.

I have even seen cases where the study of natural science first awoke a real liking and capacity for language. Things which the beginner at first sees corporeally, singly, which it is difficult for him to comprehend and to survey to his satisfaction, have afterward, under the dominion of the senses and the understanding, and by means of language, become arranged together, connected, describable, in short thoroughly understood. One name describes innumerable individual substances; and the natural philosopher sets down upon a few pages, briefly and clearly, the result of many years' investigations. The student feels doubly the magic power of words for having first felt the resisting power of the material world; and he experiences a pleasure as if, after a long and wearisome journey on foot, he should suddenly receive wings, and ascend easily and swiftly into the heights of the air, looking down upon the long, weary way over which he had before been traveling.

But the thorough mastery of one subject of study trains the student to thoroughness in others, even the most different. If he has acquired, by his studies in natural science, a clear, definite, and sure view and comprehension of the creation, and a corresponding power of expression, he will afterward acquire similar clear and definite conceptions as to language, and will learn to speak and write clearly and definitely on whatever subject he understands.

The influence of natural science will be especially valuable upon the study of history. The former pursuit requires, unconditionally, humble and self-denying views of the material world, and treats as absurd that silly or proud obstinacy which would lay down narrow limitations, and then confine nature within them; and thus it educates the mind to the habit of forming clear and undistorted views of things. And a mind thus trained becomes capable of ready and correct views of men and human life. It can recognize, in minerals and plants, and in men also, a fixed and unvarying plan; and all disfigure-

ments or distortions, for the sake of aiding any superficial theories, will be painful to it.

It is common, in gymnasia, to give only one, or at most two, hours' recitation a week to studies not reckoned as important as those we have been discussing—as geography, for instance; and this plan is often carried through three or four years, in successive classes. This, it seems to me, is an unfortunate method. It occasions those studies to be esteemed mere side-studies, of which a less thorough knowledge will serve. The pupil is sure to see this, and governs himself accordingly. If he receives, for instance, twelve hours' instruction a week in Latin and but two in geography, he not only estimates that the value of Latin is to that of geography as twelve to two, but he takes less pains in studying his geography, because his teacher is less strict in his requirements in it. And his examination and testimonials will only confirm his views on this point. But no pupil should esteem any thing which is taught him a secondary study.

Instead, therefore, of creeping along in this spiritless manner through several classes, at the rate of one or two hours a week, it would be much better to devote as much as four hours a week to the study during a year, and then to stop. Natural science, for instance, might be studied for one year at four hours a week, and geography in its place the next year; and so on. This plan would give the pupils a liking for the study, as they would feel that it had some life in it; whereas, the other mode would render it tedious and long protracted, and would afford them no pleasure at all, and least of all that of thorough learning and investigation.

If the boys have, in the under classes, got the ideas of minerals and plants well impressed on their minds, there need be no fear that they will forget them. These ideas may perhaps pass a little out of fresh remembrance; but, in the second grade of the study, at the university, they will soon return again. The student will not then have to work up his lessons with a botanical hand-book, by means of laborious comparison of descriptions; he will at once know that this flower is a daisy and that a dandelion, because he has always known it from a boy. He will not have to learn what the flower is, but only its Latin scientific name; and thus he can bring to the more comprehensive and profound investigation of the vegetable world eyes and understanding already trained.

III. EXTENT OF ACQUIREMENT.

I allude once more to the perplexity and doubts which, in view of the extent and depth of the natural sciences, must annoy the teacher who does not know how and where to begin, toward what end to

look, and what way to pursue. I have already in part shown how these difficulties may be overcome.

But the question to answer here is, whether knowledge of nature, and pleasure in it, are the exclusive privilege of the learned by profession; and, further, of that portion of them who have reached the highest point of learning? Are there not degrees in knowledge; and can not even the beginner find pleasure in the truth of that degree to which he has attained, if it be really truth? The teacher need not trouble himself about the 78,000 species of plants, nor the difficulty of classing the gramineous and umbelliferous plants. Let him take pleasure in his success, if his pupils have become acquainted with a few hundred characteristic plants, and have studied closely the growth of a few of them from their first sprouting to the ripening of their seeds.

Similar principles are true in the other departments of natural history. Most of my scholars in mineralogy have been able to devote to it but one half-year. My task was, to determine what they could learn within this time—not half-way and dimly, but wholly, clearly, and surely; and thus I dared not fix my limit at too great a distance. Where I did fix it will hereafter appear. At present I will only say that my best pupils acquired a satisfactory acquaintance with the most important, simple, and clear species of minerals,* and a clear perception, derived from actual observation, of the consistent laws which prevail throughout them. It is a consideration which may console the teacher of natural science, for the low degree of knowledge reached by his pupils, that even the greatest masters, who have attained to the highest point of learning, have confessed, with ingenuous humility, how much was that of which they were ignorant.†

IV. BEGINNING.

“We have but little solicitude,” I think I hear some say, “for the more or less of knowledge of nature which our pupils shall attain, but much about our own ignorance where and how to begin instructing in it. For we are convinced that eminent men have fallen into error on this point.”

The difficulty of adopting the right mode of beginning occurred to me when, twenty-five years ago, I undertook to give practical instruction in studying mountainous countries to the Prussian mining pupils; and induced me to write the following considerations upon the commencement of geognostic studies.

I will now state the method which, in my opinion, the student should follow.

* Such as fluor spar, lead glance, iron pyrites, garnet, &c.

† This is an expression which has a very different meaning in the mouth of the master and in that of the scholar.

He should first examine, in all directions, the neighborhood of his residence, and should make himself so thoroughly acquainted with it that he can call it up before his mind whenever he chooses. Such an acquaintance is the result of the unconscious and fresh pleasure which youth, joyful and free from scientific anxieties, will find for itself in such an examination, obtaining in this artless way a simple general impression of the vicinity, not forced upon him artificially by a teacher. He is not teased, while he is rejoicing in the blue heavens and the rapid motions of the clouds, in the oak woods and flowery meadows, where the butterflies play, by a professor with a kyanometer, to measure the blue of the sky with, nor by a recommendation not to stare into the woods, but rather to ascertain whether the oaks are *Quercus robur* or *Quercus pedunculata*; or, not to look at the flowers in the meadow all at once, as if they were a yellow carpet, but to take his Linnæus and determine the species of this ranunculus. No entomologist is setting him to chase butterflies and impale them. Neither is the youth, when inspired to devotion by the snowy Alps, glittering in moonlight, like so many spiritual, silvery forms of giants, annoyed by a geologist talking to him of granite, gneiss, and limestone, or of the junction and inclination of strata. The young enjoy the heavens and the earth as a susceptible painter or an ingenuous poet does. In this first paradisaic pleasure is planted the seed of the perception of an intellectual world, whose secrets will not be fully ascertained and understood even after the longest and most active life of scientific effort. But most teachers, by the dispersion of these simple impressions of nature, forcibly destroy these earliest pleasures of children, the brightness of the imaginary world which they see. Even the great Pestalozzi falls into an error on this point, when he says that "It is not in the woods or meadows that the child should be put, to become acquainted with trees and plants. They do not there stand in the order best calculated to display the characters of the different families, &c." That is, we ought to take the child into a botanic garden, arranged on the Linnæan system, so that he may study plants in the order of their species. To me this seems like saying that the child ought not to hear a symphony, because that would be a mere chaos of sounds to him; he should rather have played to him, first, the first violin part, then the second, then the parts for the bass viols, the flutes, clarionets, trumpets, &c. It is true that in this way he would hear the separate parts, but not the bond of thought which makes them a symphony. Jahn was much more judicious in his gymnastic walks, when he said, not "we are going botanizing, geologizing, or entomologizing," but merely, "we are going to walk." How much more naturally do our youth, when the

bird-of-passage instinct seizes them at the university, wander through the father-land and rejoice in its grandeur, and lay it deeply to heart, without any idea of a premature, and painful, and usually repulsive studying of any particular subject. I hate this analyzing and lifeless elementarizing of the first youthful impressions of nature—this foolish, superficial, heartless, frivolous directing of the understanding prematurely out of its natural path—which is so sure to chill the youthful heart and render it old before its time. The utmost attainments of a mind thus trained must be—unless aided by remarkable natural qualities—to observe with the bodily eye; to use the reason, but not with pleasure; to derive mere lifeless ideas from creation; and to represent the objects thus conceived in equally lifeless descriptions, like the ghastly wax figures which afford a repulsive imitation of living men.

There is, however, a mode of learning intelligently, which is not chilling, but thoroughly genial and appropriate. But, it should be observed, the mode of instruction just described has a diametrical opposite in that whose advocates despise the adult reason, and would constrain themselves to remain children always—to feel, and only to feel. Among these advocates are prominent the numerous disgusting, pitiful poetasters of our time, who undertake to deal with nature in so remarkably childlike a manner. Their false simplicity and innocence is to real childlike innocence what a French actress, who plays the smart chambermaid, is to a truly noble young damsel. He who feels himself a man should endeavor in manly wise to understand and represent nature with as deep poetic feeling, and as gigantic understanding, as that which Shakspeare used in delineating men and life. But I return to my subject.

If the first mental growth of the young is watched over in holy quiet, the results of the mode of training which I recommend, how prosaic soever they may appear, will not be prosaic. The recollection of youthful devotional premonitions will become a hope of realizing them, and will enliven, strengthen, and inspire every effort. After you have enjoyed the unmingled, complete, rich pleasure of a full symphony, you willingly undertake the wearisome labor of becoming familiar with each part of it; for each is to you not a dead thing, but a living portion of the whole symphony, whose collective remembrance lives in your soul. And if now, knowing all the separate parts, you hear the symphony again, you hear with pleasure both each separate part and the united sound of all; and your apprehension of the whole symphony, previously simple and obscure, develops and becomes clear.

In a similar manner the learner proceeds, from passively offering himself to receive impressions, from an artless susceptibility to the

collective impression produced by the locality examined, to an active effort to distinguish this impression into its component parts. The great compound picture of the district about him divides into innumerable little ones, of towns, men, animals, trees, flowers, and in like manner do the mountains—for instance, their minerals, and their structure.

What has been said of the method of geognostic study, both of its rudiments and of its ultimate purpose, is applicable, as we shall see, to other branches of natural science.

V. SCIENCE AND ART.

“As the susceptible painter, the ingenuous poet, rejoice in the heavens and the earth, so does the youthful heart.” And, I may add, the future geognosist. But, it will be asked, does this laborious and prosaic workman proceed from the same initial point of education as the passionate and delicate painter? I answer, decidedly, Yes; and, I add, other departments of art begin, in like manner, coincidently with other departments of science. If a boy loves flowers, he may become equally a botanist or a flower-painter. The celebrated painter of animals, Paul Potter, the author of “*Reynard the Fox*,” as well as the great zoölogist, Cuvier, all, as boys, took delight in animals, and had an eye susceptible to them. A liking for beautiful mathematical bodies may characterize a future mineralogist, or mathematician, or architect. Susceptibility to colors indicates a future painter or a future optician; and an ear for music, either a musician or an acoustician. Nor do the different roads of the artists and naturalists, who proceed from the same point, ever become entirely separate. Michael Angelo was a great anatomist; Durer wrote on perspective, and on the relations of the human body; Otto Philip Runge constructed a theory of colors. Goethe sang of flowers, and wrote his valuable “*Metamorphoses of Plants* ;” he had an eye seldom equaled for the beauty of mountains, and he both observed and described them in a masterly manner, according to their geognostic character. A man who is endowed with susceptibility to beauty, and the artist’s power of representation, and also with clear and energetic thought, will produce scientific works containing beauty, and artistic works of profound thought. It is not only true that we find united, in extraordinary men, great capacity both for science and art, and that the first rudiments of scientific and artistic training are frequently the same, but we see that many arts need the aid of science, and many sciences of the arts. The architect must understand mechanics; the painter, perspective, anatomy, and the chemistry of colors: botany and zoölogy require good pictures of plants and animals; and mineralogy, clear and accurate drawings of crystals.

Science seeks principally truth; but art, beauty. While the botanist endeavors to establish as correctly and completely as possible the idea of the species *Rose*, the painter tries to present his ideal of a *Rosa centifolia*; and the poet leads us, through the gardens of poetry, to roses of unimaginable beauty. While the Greek sculptor carved the Lions of St. Mark, Cuvier gave us an excellent description of the king of beasts. From the school of Werner came scientific works on mineralogy and mining, and likewise the miners' songs of Novalia.

I have lengthened this discussion, in order to bring out a pedagogical rule to which I have already referred in speaking of teaching geognosy. It is, to have constant reference, not only at the beginning but throughout all the course of instruction in natural science, to the beauty of God's works; to cultivate the pupils' susceptibility to this beauty; and to develop, along with the receptive faculty, however directed, the power of representing as perfectly as possible the thing seen: so that, for example, the boys shall learn not only to examine and recognize plants and crystals but to draw them. It is more necessary to refer to this, because the beauty of which I speak is so wholly indifferent to so many teachers. They make no endeavor to learn whether their pupils take such pleasure in flowers, and examine them with the same penetrating attention that a flower-painter uses. They rather make their tyros analyze them, pull them to pieces, physically and mentally count their anthers and pistils, &c. Before the boys have even gained a thorough and familiar idea of the flower, they are made to endeavor to get an idea of its species in this destructive manner.

Especial haste is used, in those departments of natural science which are based on mathematics, in proceeding from observation by the senses to abstract mathematical theory. It is no wonder that this is the case in our day, when atomistics and mechanics, in a mathematical form, are every where forcing themselves forward, and where so many are seeking after mere bare truth only, without any reference at all to beauty.

VI. MATHEMATICAL AND ELEMENTARY INSTRUCTION IN NATURAL SCIENCE.

Mathematics are the root and blood of a knowledge of the laws of nature and of art.* It reveals the laws of crystallization and of chemical unions; the number of petals and of anthers; the figure, size, and motions of the stars. It is the soul of the firmness of mighty cathedrals, of harmony in music; it gives the painter proportion and

* "The form was in the archetype before it was in the work; in the divine mind before it was in the creature."—Kepler, "*Harmon. Mundi*," l.

grouping, and lives in the hexameters of Homer and the choral measures of the tragedians.

But can we for such reasons, when instruction is required in music, drawing, &c., answer, Yes! we teach mathematics, and shall thus at least indirectly prepare the pupil for the studies which you wish? By no means; and as little would it serve where instruction in natural science is required. These considerations lead to the very important question of the relations between mathematical instruction and instruction in drawing, music, natural science, &c. On this point there are two opposite opinions; one of which would place mathematics at the beginning of the courses, and the other at the end.

In support of the former of these doctrines, it may be said, "If we grant that mathematics form the theory of laws of nature and art, what could be more appropriate than to begin with it? When the scholars have gained a thorough acquaintance with pure mathematics, they thus become capable of easily mastering any natural science, or of acquiring knowledge and skill in the arts. In the pure mathematics is the point for setting the lever which will move the world; it is the center from which light radiates to innumerable points on the circumference—to innumerable sciences and arts. Should the teacher rather choose to select from their multitude one point or a few, and thence seek to reach the center?"

This view is plausible, but untenable.

The history of the arts and sciences is opposed to the idea of beginning with instruction in pure mathematics. The course of development of the human race has not confirmed its propriety, either. The fact was not that minds of a purely speculative character, operating entirely within themselves, developed pure mathematical truth, which others afterward applied to nature and art. In this sense, there have been almost no applied mathematics. The truth is, that a gradual and deliberate apprehension of purely mathematical relations has developed in such departments as music, surveying, architecture, drawing, astronomy, geology, &c.,* from a beginning of purely material conceptions, yet guided by the principles of mathematics, hidden within them as a human instinct. From this heterogeneous world of phenomena its common elementary spirit, the spirit of pure mathematics, arose subsequently. This succession of the sciences can not be too carefully remembered, for every scholar has to go through one more or less similar.

It is also a great error to believe that a person thoroughly grounded

* How completely new is the world of beautiful inter-related mathematical bodies which has arisen from the investigations into natural crystals, and how utterly were the great early mathematicians without an *a priori* knowledge of it!

in pure mathematics is thus fully prepared for all the arts and sciences which are based on mathematics—that he can juggle with them by means of his formulas. Is it supposed that one who has learned general bass—the mathematical basis of music—has by that means trained his feelings and his ear? Does knowledge of perspective make a painter; or of metrics, a poet? Is one who knows how to calculate a crystal a mineralogist?

On the contrary, the reason, during those years when it is dormant, but the senses are active and hungry, is powerfully stimulated by pure mathematics, and developed at the expense of the senses. The boy, under an unnatural mental excitement, and thrown into this wholly subjective train of thought—this activity of the reason exclusively within itself—loses his quiet, peaceful, and natural bodily sensitiveness to the material creation. He will even, in time, lose the humility with which he sought after the laws of God's world, with self-sacrifice and sincere industry, and with which he felt a pious joy in discovering them; and he imperceptibly becomes a scientific egoist, having no feeling for faith in any thing except in his own mind and mental labor; and who, even if he discovers a natural law, can only rejoice in it as in the child of his own intellect—as if he were a law-giver to the creation. I am not exaggerating. Only consider any one of many trained naturalists, who have been educated in this way, whether they are not such as I have said.

If, now, we would preserve a natural and proper susceptibility to nature in our pupils—if we would protect them against such a premature and bald forcing of the growth of the understanding—we must permit them to begin their studies with the natural and easy observation and practice of youth; and gradually bring them forward from this to a properly pure mathematical mode of investigating and training.

Mathematical instruction, too early put in the place of physical observation of nature, is so far from compensating for it that it is injurious to it. Bacon's observation is here eminently in point: "Mathematics should terminate the study of natural philosophy; it should not introduce or create it."^{*}

VII. INSTRUCTION IN MINERALOGY.

With Werner opened a new era not only in the science of mineralogy but also in the method of instructing it. Before him, scientific mineralogy was scarcely known; or the thorough knowledge, description, or classification of minerals. Naturalists were satisfied with un-

^{*} What has here been said will be illustrated by subsequent examples. Further details will be found in the chapter on Geometry.

derstanding and teaching such of their peculiarities as were most obvious. Gold, they said, is yellow, bright, and heavy. But these same terms might be used to describe copper pyrites, or iron pyrites—as in Messing. Werner perceived how defective were such descriptions; and how far they were from being sufficient to describe the peculiarities of a mineral or a species—and still more to distinguish with entire certainty one mineral, or one species, from another.* He believed that not merely this or that prominent characteristic of a mineral, but all of its characteristics, the most obvious and the most recondite alike, should be understood and expressed. It was in this belief that he wrote his "*Theory of External Characteristics*," (*Lehre von den Aeussern Kennzeichen*.)† What he here aimed at was, in fact, an exhaustive statement of the sensible characteristics of minerals; though all that he stated himself to seek was the best, fittest, and most invariable expressions for their characters, their species, and their grades. The motto of his book was "Be not facile in choice of words; in order that you may agree in things." And he arranged these characteristics in a definite and well-adjusted order.

In describing all the peculiarities of a mineral, he paid all his attention to the order, clear comprehension, and expression of its external characteristics. He endeavored to set forth in words the whole of the peculiarities of the mineral, in the most correct manner, so that his description should fully state the elements of the whole impression made by the mineral upon the senses.

In a similar manner he described a species of minerals; but with this difference, that, whereas the single stone has one definite color, one definite mode of crystallization, &c., the species to which it belongs usually includes a variety of related colors and crystals, which must be described.

Not to enlarge upon the brief general theory of classification with which Werner began, he commenced his mineralogical lectures proper with instruction in the external marks. This was followed by a description of the species closely connected with it, and by a rapid exhibition of the groups described. His oral lecture, which was of great value in itself, was the prominent feature; and the actual display of the groups of minerals was quite subordinate.

"Words are good," says Goethe, "but not best." This was true in the present case. I have already mentioned how we strove in vain not to be confined to a mere description of the minerals, but to ob-

* It is this defectiveness in descriptions which leaves us so often at a loss to know what mineral the early writers—Pliny, for instance—meant by any given name.

† This work appeared in 1774, and was translated into various languages. Werner was twenty-four when he wrote it.

tain a knowledge of the minerals themselves ; and how it was chiefly this unpleasant experience at Werner's lectures which afterward caused me to work out another quite opposite method in teaching mineralogy.

It seems to me the natural way of beginning, to let the pupil first examine the mineral, without at the time enlightening him with any oral explanation whatever. In this way he receives a first simple impression on the senses. If this impression is remembered, he may then be told the names of the minerals examined.*

It is important to begin with instructing in external characteristics, because this instruction communicates the results of the most thorough analysis of the general idea into its constituents. It would be wrong to begin by making the pupil observe in one mineral the weight alone, in another only the color or only the hardness ; for such a method would break up the quiet, thoughtful, receptive mood proper to obtain an apprehension of the total idea.

But after having mastered this total idea of the mineral, the pupil must, especially if he desires to compare it with similar minerals, and to distinguish it from them, reduce this idea to its constituent peculiarities, even to the varying modifications of these peculiarities. For instance, on comparing gold with iron pyrites he will find both yellow ; but there is a great difference between the pure, clear yellow of gold, and the pale whitish of the pyrites. He finds gold to be soft and malleable, while the brittle pyrites will give off to steel abundant sparks, large and smelling of sulphur, &c.

Thus, by a careful comparison of the separate peculiarities of both minerals, their great difference will clearly appear ; whereas, without such a process, only an indistinct notion of them would be had. Indeed, there are many minerals of which the general idea would lead into great errors without a closer analysis of their qualities. Thus, the student would be much more likely to class a beautiful yellow polished crystal along with the topaz than to rank it as similar to a piece of insignificant, opaque, homely, white quartz, though the latter is its proper place.

Werner's theory of external marks is very simple, and quite sufficient to enable mining officials to deal with the minerals which they are likely to meet with. These officers can not go into delicate investigations. For example, the purely scientific mineralogist determines the specific gravity of a mineral by means of a fine balance. The specific gravity of water is taken as the unit, and that of the mineral is reckoned from it, and carried out to three or four decimal

* The commencement of mineralogical instruction is entirely like that of geognosy and botany ; in every case, a vivid and permanent impression should be had of the total idea before any analysis of it.

places. The specific gravity of water being thus 1,000, that of gold is 19,258. The miner can not usually attempt so accurate a determination; but he can make that which Werner gives. He makes five grades of specific gravity; and very judiciously taught his pupils to determine these, without balances, by poisoning the substance in the hand. He required them to be able to say only "Gold belongs among the extraordinarily heavy minerals;"* not that "its specific gravity is 19,258."

What Werner did not require from mining officers we can still less require of new beginners in mineralogy; they must first learn to estimate specific gravities by the hand.

Werner's mode of dealing with other points was similar. He treated his subject exhaustively, but was very far from giving a delicately accurate physical description of every separate item; nor will he be found to furnish a mathematically developed crystallography.†

As crystallization is one of the most important, if not the most important, characteristics of a mineral, I shall devote a little space to it.

The angles of crystals are mathematically true and unvarying; but the size of the side varies infinitely, without affecting the angles. Thus, for instance, we seldom find a cubic crystal with six equal sides; but the right angles of its sides and corners are invariable.‡

The beginner will find his study of the polyhedral crystals much perplexed by these variations of the size of the surfaces; and, to assist him, he is usually furnished with models, in which the corresponding sides are made equal. His model for the cube, for instance, has six equal squares; that of the octahedron, eight equal and equilateral triangles.

Above all, the beginner should be drilled in the recognition of crystals by the eye; and his perceptions of their beautiful symmetry, and of the various relations connected with this symmetry, should be trained.

I can not here set forth the details of the method which I should recommend in teaching mineralogy.§ I shall only observe, in general, that the teacher must be careful not to carry the pupil too soon from the use of his senses to the mathematical part of his study.||

* This class includes minerals whose specific gravity is over 6,000.

† It is not meant that the teacher ought to restrict himself entirely to Werner's theory of the external marks; there are many points (in crystallography especially) which must be made more clear and definite than he made them. But, like Werner, the teacher must never lose sight of the elementary attitude.

‡ More will hereafter be said on this point.

§ On this point I refer to the chapter on Geometry, and to my "*A B C-Book of Crystallography*," (*A B C-Buch der Krystallkunde*.)

|| What here follows may be used as additional to what was said above of the relation between mathematical and elementary instruction in natural science.

It is enough for the beginner to know that the cube has six sides, twelve edges, and eight corners. But that the edge, that the diagonal of a side, and the axis of the crystal, are to each other as the square roots of 1, 2, and 3, is a fact with which he has no business; nor has it any thing to do with the recognition of natural crystals. Nor need he be given the use of certain mathematical aids. He should describe the twelve edges of a cube standing on a horizontal surface thus: four horizontal edges above, four below, and four vertical ones. But he should not say, out of Euclid, "There are six quadrilateral surfaces, and the cube has therefore $6 \times 4 \div 2 = 12$ edges. That such a calculation does not afford a full description of its form appears from crystals, whose surfaces consist of equal numbers of sides, but not of sides of the same form. Vesuvianite, [*das Leuzitader*,] for instance, has a surface of twenty-four trapeziums, and therefore $24 \times 4 \div 2 = 48$ edges; but twenty-four of these are entirely different from the other twenty-four.

A beginner, if he understands subtraction, can by another formula ascertain very easily the number of angles of a body, of which he has not the slightest knowledge through his senses. This is, that the number of angles of a body equals that of its edges, diminished by that of its surfaces less two.* If, therefore, I tell the beginner that a certain body has 540 edges and 182 surfaces, he can instantly say by his formula that it has $540 - 180 = 360$ angles. But, if I give him the body itself, he is not in the least able to form such an idea of it as to determine that some of its angles are formed from six surfaces, &c. He may perhaps not even be able to state, without first reasoning with himself, how many surfaces, edges, and angles there are in a cube. In short, his formula serves him, according to the familiar German proverb, as an asses' bridge. He neither understands it nor what he discovers by its means; and the readiness with which he ascertains results by its use hinders him from strenuous labors to discover the right thing in the right way.

But how, is the next question, shall the pupil learn to analyze the external marks of minerals—to consider the mineral with reference to each individual characteristic? I reply: The best introduction to this knowledge is to take him through a collection arranged by external marks; in which each group, as far as possible, shall lie before him in the order of its colors, crystallization, &c. The teacher will need to give but very little aid—only to put into words what the pupil sees, or to require the more advanced pupils to do it themselves.

* $A = E - (S - 2)$. From this, E or S can be determined, if the number of angles and surfaces, or of edges and angles, is given.

This investigation of the collection should follow the general theory of external marks; which is indeed only an arrangement of the characteristics which the pupil has learned to know from the examination of single species.* When the pupil has in this way attained a moderate degree of skill, in the objects and technics of the study, then, and not before, he is prepared to read mineralogies. Where the mineralogical author has translated minerals and species into words, a pupil thus trained can translate the words back again into minerals. Every word is to him a living incantation, which awakes the slumbering ideas previously impressed upon his mind.

But, in order that each word may awaken the corresponding conception in the mind, all ambiguity must, as we have already shown, be avoided, and only one fixed term be used for each mineral and each characteristic. This was what Werner meant by his "Be not facile in choice of words, in order that you may agree in things." And the converse is true: Be not facile in selecting things, in order that you may agree in words. To understand words is only possible when things are understood. The utmost definiteness in terms, the most accurate expression, will be useless to the scholar, unless the most definite corresponding impressions exist in his mind, to be called up again by those expressions—by words. "No description," says Forster, in his "*Views on the Lower Rhine*," (*Ansichten vom Niederrhein*), "will convey to another what my own eyes have received directly from the object, unless he has something with which to compare that object. The botanist may describe to you a rose with the most appropriate terms of his science, may name all its parts even to the smallest, may state their relative size, form, position, substance, surface, and coloring—in short, he may give you such a description as, if you had the rose before you, would leave nothing to desire—and yet it would be impossible, if you had never seen a rose, for him thus to call up an image of it which should correspond with the original. No painter would dare undertake to paint from description a flower which he had never seen. But take but a single look, one single observation with the senses, and its image is indelibly imprinted upon the mind." Can any one doubt whether Forster is right, or that learned man who flattered himself that he had so perfectly described a certain cabinet of antiquities that it might safely be entirely destroyed, because a skillful sculptor could completely restore it from his description? If Forster is right, which I do not doubt, then it must needs be admitted that the endeavor is utterly foolish to teach a knowledge of minerals by mere oral instruction and reading of books.

* For further details on this point see Appendix II.

I have thus endeavored to describe the method of my instructions in mineralogy, and its reasons; and to show how the pupil may be gradually carried onward, from his first silent and simple observation of nature, to a full and intelligent comprehension and description of minerals and all their peculiarities.* It remains to offer some observations on the traits of pupils.

VIII. CHARACTERISTICS OF PUPILS.

There is a universal method of instruction, applicable to all pupils, and based upon the nature of its subject, which is the same for all pupils, and upon the universal qualities of human character. I have hitherto discussed this method, which was that followed by me in teaching mineralogy.

It is usually thought that he who is master of a department of study is a qualified teacher of it; too little regard being had to his knowledge of his pupils. And thus many teachers are deficient in an understanding of the universal relation that exists between the pupil and the study, and in the skill in teaching which depends upon that understanding—the universal method.

I soon learned, however, not usually instructing by the ordinary method of lectures, how little there is in common in mineralogical instruction and in the universal method. I found pupils of so distinctly different and even opposite characters that I saw plainly that it was impossible to instruct them all in the same way. And the longer I taught the more I felt the necessity of studying the peculiarities of pupils with the same attention which is usually devoted only to the subject of instruction; that the teacher of natural history should be able to draw up as good a monograph upon single scholars as upon single species. But in order to pay attention to each individual pupil, and to be able to instruct him in a proper manner, the teacher must be such a master of his subject that no difficulty will rise to embarrass him while he is teaching. In this mode of regarding each single pupil I have had many experiences, bad and good; of which I will here mention a few.

And, first, the bad ones.

Complaints are made of inactive muscles, of weak arms, shoulders, and legs; but much more complaint should be made of imperfect senses, and especially of eyes dulled almost to entire insensibility. This I have found, to my sorrow, in many pupils, particularly the older ones. And no wonder. Brought up in the city, among books, their eyes were directed to almost nothing except reading and writing,

* It is only after having reached this point that they should take up mineralogical chemistry.

a sad and grievous slavery, in which the unfortunate senses were left almost destitute of any pleasure, stimulus, or refreshment, and without any cultivation by use. The eyes of the younger pupils were more active, because they had not been so long in slavery. There were however some exceptions among the older ones, in the cases of those whose early experience had obliged them to use their eyes; as in some miners and smelters, young people from the country, and a painter's son.

This dullness of eye was partly bodily, but chiefly mental. It was only very gradually that the torpid bodily senses grew more acute, and that the active reciprocal stimulating influence between mind and senses, so long disused, was re-established. What made this re-establishment specially difficult was the fact that most of them, brought up under oral instruction on all subjects whatever, partook of the prevailing belief that every thing in the world could be communicated orally, even mineralogy; and that therefore there was no need whatever for a direct observation of nature by the senses. They were in despair at any attempt to induce them to make such observations; and intimated that their teacher was pre-eminently endowed for that purpose by nature, and that it would be far wiser for him to tell them what his good, well-trained eyes saw in the minerals than to try to make them see, with their incapable and untaught eyes. There were but few of them whom I could make understand why mere oral lectures were useless in this pursuit; and I succeeded but with a few, who were practicing bodily exercises. I said to them that they needed to exercise their eyes in this study, as much as they did their arms and legs in their gymnastics; and that they might as well expect to learn to run and leap by attending lectures on Jahn's Gymnastics as to become acquainted with minerals by lectures on them. This made the case clear to these few.

Again, there was another class of pupils with whom I had great difficulty in being understood. This new requirement, to use their torpid eyes, and to examine the minerals attentively and quietly, seemed very extraordinary to them. It was as if I was making them read a book in a foreign language, which I could translate, and which, out of obstinacy, I would not. Innumerable questions betrayed their thoughts. I ought at least to tell them the names, before they examined the minerals. And when I replied, that those pupils who gained clear and definite ideas of the appearance of the minerals, without knowing their names, would please me infinitely more than those who should remember their names without their appearance, they did not understand me; for they had usually been accustomed, in their study of geography, history, &c., to satisfy their teacher with

the emptiest memorization of names. I had the most trouble with some grown-up persons, whose powers of thought had been unnaturally stimulated, and who had thus lost that quiet mood of mind which is indispensable for enjoying the benefit of a real thorough and intelligent receptivity. They were incessantly interrupted and diverted by notions that occurred to them—the untimely misconceptions of a cursory, superficial mode of observation.

But this will suffice for these unfortunate experiences; which I do not lay to the account of my pupils, but which were the necessary outgrowth of the period. I am the less disposed to blame my pupils for these things because I myself, when a scholar, had the same experience, even sometimes to a greater degree. I was even earlier in my conviction that every thing could be learned out of a book; and in feeling the same despair at being set to use my eyes. During subsequent years, especially, I have enjoyed a large overplus of pleasant experiences, even with pupils who were at first exceedingly awkward. If the visual powers are once awakened, if the least mutual stimulation is awakened between the senses and the mind, the susceptibilities of the mind and the senses increase with every day.

It appears, from what has been said, that every pupil develops himself in his own peculiar manner. Some of them were lucid, intelligent, prompt, appropriate, definite, and certain in answering; while others were more inclined to feeling, quiet and withdrawn within themselves, slower to understand and later in attaining power of expression.

Some seemed to have equal talents for every thing; while others were inclined in some one direction. Some, particularly, seemed to have a remarkable susceptibility to color and luster, but to be quite wanting in perception of form; while others were precisely the contrary, having an acute eye for form, but being deficient in feeling for luster or color. These last were often inclined to proceed quickly from actual observation of objects to mathematical treatment of them; some even carrying this tendency so far as to begin it altogether prematurely, and as to be entirely indifferent whether an octahedron was the most beautiful diamond, or a wooden one. In this way they forgot the most important consideration for them; namely, that they were dealing with the marvelous creations of God, not with the mere thoughts of men.

The active and sensitive eyes of those who had a feeling for color and luster, on the contrary, became gradually educated to a full apprehension of the crystals, in all the beauty of their forms and modifications. They also comprehended the mathematical laws of these

forms, so far as they could be deduced immediately from actual observation of them; but showed a want of facility in mastering the pure mathematics of the subject, and a dislike for it.

Some pupils showed similar tendencies toward particular groups of minerals, and dislikes for others; and they mastered more easily a knowledge of those they liked, even when they seemed, to one free from any prepossession on the subject, much more difficult than the others.

These and other peculiarities of pupils, which I can not fully describe without giving an account of each individual pupil, became the cause of my opinion that teaching exclusively in one general method is quite impossible.

IX. INSTRUCTION IN BOTANY.

In the private school at Nuremberg, where I instructed for three years, I also taught botany. The plants used were found in the neighborhood of the city, or in the garden of the institution. The most common garden-plants, as being best known and most useful, were made most prominent—as domestic animals were in zoölogy. When the boys returned from their excursions, the plants they had collected were laid fresh together on a table, examined, and named. At the end of the lesson, each pupil entered the names on a paper, and afterward in a book, divided as follows:—

TIME.	NAME.	PLACE.	REMARKS.
May.	Granulous Saxifrage.	Mögeldorf.	Has a granulated root.

The pupils might write under "Remarks" whatever they chose; and each, of course, inserted what had struck him most in looking at the plant. I have already observed that I considered it a very great error to require from beginners a complete and exhaustive description; inasmuch as this must be based upon a previous analysis of a total conception, which they have not yet attained.

These registers of plants served afterward as botanical calendars, from which could be seen where and at what time certain plants could be found; as, saxifrage at Mögeldorf, in May, &c. They also now began, of their own accord, to classify the species into genera. A boy brought in a plant, and was told that it was a speedwell, and after a few days he brought in another, and very correctly said, "Here is another sort of speedwell." So simple and natural, in strongly-marked plants, is the arrangement into genera of species.

It will be found judicious, lest this scientific examination should make them indifferent to the beauty of the flowers, and make them too exclusively occupied with the use of the intellect alone, to employ such as show sufficient taste for it, in drawing flowers.

During the first summer my pupils acquired a knowledge of between three and four hundred varieties. This is rather too great a number than too small; it is better to get a thorough and permanent acquaintance with a few plants than an indistinct and superficial one of many.

X. NECESSARY INCONSISTENCY.

Bacon says,* "There is scarce any entrance to the domain of human science than to the kingdom of heaven, into which one can not enter unless he become as a little child."

The poet† makes a similar demand upon the public, at the representation of his dramatized plays; where he demands that the spectators shall for a time forget their education and their knowledge, and "become children again." But the people answer him, "We thank God that we are no longer children; our education cost us pains and sweat enough."

I have before complained that the pupils at our schools of learning dive so entirely among books and lectures—in a world of words, and so entirely shut out from any active intercourse with nature and life—that they have usually, by the time that they enter the university, forgotten the first impressions of nature which they received in childhood, and seem even to have lost the child's capacity of receiving them. Their minds, in this case, must now be first awakened anew to nature, and brought back to their former childlike condition, not exclusively by actual observation, but chiefly by words—by the stimulus of properly-directed oral lectures.

It was from this point of view that I endeavored to perform my task of lecturing on general natural history. And even in my lectures on mineralogy, I accommodated myself to the necessities of the case. That is, although I regularly instructed my younger scholars in the manner I have described, yet in the subsequent academical lectures I varied, in one respect, from it. In order to render oral instruction possible, I was forced, whether I would or no, to begin with instruction in external marks; with a practical explanation of the technical mineralogical terms. In other respects I remained quite true to my earlier method.

XI. "MYSTERIOUSLY REVEALED."‡

Instruction in mineralogy, botany, and zoology leads, as we have seen, from actual inspection to the development of the ideas of species, genera, &c., which are component parts of created beings, and are revealed by examining their appearances. These ideas connect what are of like kinds, and separate them from those unlike them.

* Nov. Org., I., 68.

† Tieck, in "Pass in Boots," (*Phantoms*.) 2, 267.

‡ "Thou stand'st mysteriously revealed," Goethe's "*Winter Journey to the Rhine*." (*Wanderzeit im Winter*.)

But when we have correctly learned and expressed these generic ideas, have we thus arrived at the actuality of their existence?—have we learned what is the essence of their being and life?

Haller, who all his long life unweariedly and honestly investigated nature, may answer :

“No spirit, however creative, can pierce the secrets of nature.”

No created spirit he meant, of course; the Creator is to be excepted. And the great Bacon agrees with Haller: * “It is falsely claimed that the senses of man are the measure of things; on the other hand, all the apprehensions, both of the senses and of the intellect, correspond to the essential nature of man, not to that of the universe. The human understanding is like an uneven mirror in reflecting objects—it mingles up its own nature with their nature, and confuses and colors them.” And Newton’s doctrine is the same, when he says, “We see only the forms and colors of bodies, hear only their sounds, feel only their outer surfaces, smell only their perfume, taste only their flavor; the essence of their being we can perceive by no sense and by no reflection.” †

Goethe at one time controverted Haller’s assertion, but afterward agreed with it. He says, ‡ “The true, identical with the divine, will never permit itself to be directly perceived by us; we discern it only in reflections, examples, symbols; in single and related phenomena; we become aware of its existence as an incomprehensible life, and yet can not escape the desire of comprehending it.”

Cuvier repeatedly admits that there are incomprehensible mysteries in his science. Thus he says, “The operation of external things upon the consciousness, the awakening of a perception, a conception, is a secret impenetrable to our reason.” The great zoölogist, who has surpassed all in investigating the laws of the animal creation, comes upon the question—what is life? and how does it exist? and he confesses that these important questions can not be answered; that life is a profound mystery. §

We often hear the confession, “How vast is that of which we are ignorant!” We readily admit that we know nothing of the interior of Africa, or of the lands near the poles; that probably many new plants, animals, and minerals may be discovered there, and the like;

* Nov. Org., I., 41.

† Principia, 3, 1. 675. (Le Seur’s ed., 1760) “Their essence we can perceive by no sense, no reflection; and much less have we any idea of the essential substance of God.”

‡ Works, 61, 254.

§ Cuvier’s “*Animal Kingdom*,” translated by Voigt, vol. 1. 9, 10. “All the endeavors of physicians have been unable to inform us how life is organized; whether of itself, or from some external source.” “The existence of organized bodies is therefore the greatest secret of organic economy, and of all nature.”

but what if we are convicted of universal ignorance of every thing included in the domain of science? I repeat: Have we effected a perfectly exhaustive investigation of any single existence or fact in nature? Is it not rather the case that every such fact has both its comprehensible and incomprehensible side, and, like the moon, turns one side toward us, sometimes lighter and sometimes darker, but keeps the other always turned from us!*

Did not Cuvier, so mighty in investigating the laws of the animal creation, yet find each animal a riddle, and was he not thus brought to confess that life was a riddle to him?

When the mineralogist measures and computes, with his utmost accuracy, the primitive rhomboids of calcareous spar, and determines mathematically its relation to the many hundreds of crystallized forms which that mineral offers, does he, for all this, understand these rhomboids? Can he tell how it is that it becomes possible to split them in three directions, parallel to the three parts of rhombic surfaces, so that each surface of cleavage shall be a perfect plane—polished, and with angles mathematically true? We shall look to him in vain for answers to these questions.

The astronomer, of all men, claims to be the most scientific. He computes with accuracy the movements of planets, and comets, and moons, at vast distances of time and place, and demonstrates the most delicate observation in his astronomical prophecy as the correctness of a problem is demonstrated by the proof. Is there here also room for ignorance? I reply: Count one hundred while the minute-hand of a watch is going from twelve to one, and go on counting at the same rate. You can then predict with certainty that when you have counted six hundred the hand will stand at six, and when you have counted twelve hundred it will have completed its circuit. But notwithstanding this prediction, you may perhaps never have opened the watch, and may know nothing whatever of its construction or mechanism. Even so is it with the astronomer. However accurately he can compute the path of Jupiter, can he for that reason tell what are the essential qualities of Jupiter?† What man can even answer

* "Because that which may be known of God is manifest in them." "For we know in part . . . but when that which is perfect is come, then that which is in part shall be done away . . . now I know in part, but then shall I know even as also I am known."

† Newton, who, as we have seen, considered the real essence of all bodies entirely incomprehensible to man, would of course reply that such requirements could not be satisfied. The originator of the theory of gravitation, he repeatedly declared that he knew only qualities of gravity, not its essence. Thus he says, "I have explained the phenomena of the heaven and of the sea by the power of gravity, but I have not assigned any cause for gravity." Again, having stated the qualities of gravity, he says, "But I have not been able to deduce from the phenomena the cause of these properties of gravity, and I offer no hypothesis." (*Princip.*, l. c., p. 66.) And in like manner in the "*Optics*." (Clarke's ed., 1740, p. 326.) "There are efficient principles, such as gravity, whose existence is testified to by natural phenomena; but what are the causes of these principles has never been explained. Every

the question, What is the essential nature of the earth—of this very earth on which you live? And if any one should pretend to have an answer to it, he may be replied to with the reply of the Earth-Spirit in Goethe's *Faust*:

"Thou art equal to the spirit which thou comprehendest—
Not to me."——

Such considerations should not, however, lead to an apathetic despair of understanding any understanding of nature, but should only counteract the illusive notion that man can understand created things in the way in which only God, their creator, can understand them.* To us nature is "mysteriously revealed."

But, it may be inquired, what is the value of this discussion in a work on pedagogy?

I reply: A recognition of the wonderful union of revelation and mystery in nature, and the clearest possible perception of the boundary between them, will exercise a most important influence upon the character of the teacher and upon his study of nature.

The mysteries of nature will direct him in humility and earnestness toward eternity; while he will investigate what is susceptible of being known with conscientious and persevering industry, thanking God for every pleasure which he receives from discovering the beautiful and invariable divine laws.†

And how can this state of feeling and this knowledge in the teacher fail to have the greatest and most excellent influence upon his methods of instruction?

Any one doubtful as to the goodness of this influence will be convinced of it, if he will examine the bad influence exerted on their scholars by such teachers as are destitute of the knowledge and feeling which give it; who live in a narrow circle of overestimation of themselves. For them there are no mysteries; they can comprehend every thing. And then it most commonly happens that they fail to observe and learn what is really attainable, while they weary themselves in vain over the incomprehensible; and thus, instead of ascertaining divine laws, they hatch out a parcel of chimeras, which in their presumptuous blindness they set up as being those laws. The proverb may well be applied to them, that they make fools of themselves by thinking themselves so wise. And they make their scholars fools.

where the qualities are manifest, but their causes are hidden." And again, "There are originating causes (*principia*) of motion, as gravity. But the causes of these I leave to be investigated."

* "By universal analogy."—(Bacon.)

† As Kepler repeatedly does.

XII. LAW AND FREEDOM.

Beginners are dismayed at the apparent irregularity of crystals. On comparing, for instance, the model of a cube, of six equal sides, with a cubic crystal of fluor spar, whose sides are very unequal, he fancies that, notwithstanding the right angles of the spar, there is by no means as entire a regularity in the natural crystal as in the artificial model.

To remove this error, we may first consider the way in which laws prevail in the vegetable world. When the botanist says of the lily that its blossom has a six-petaled campanulate corolla, six anthers, a sefid, capsule, &c., a German lily will answer the description as well as a lily from Mount Carmel. And so do the carefully painted lilies in old paintings; they have a six-leaved corolla, six anthers, &c. Thus the generic description, which the botanist gives, applies to lilies of all countries and periods. The close adherence to the law is evident; but an ignorant person, on learning so much, might probably conclude that all lilies were all exactly alike, and that accordingly great monotony must prevail throughout the creation. Such was the idea of the electress who denied Leibnitz's assertion that no leaf was precisely like another; but all her endeavors to find two precisely alike were quite in vain. It would be equally impossible to find two lilies exactly alike, though they grew upon the same stem. "The law of the Lord is unchangeable," but their unchangeableness does not produce a disagreeable monotony among the individuals subject to it; but under its protection there prevails an agreeable variety and unconstrained beauty.

This appears still more clearly in the animal kingdom; most of all in the human race. Here the law becomes less and less apparent, and the freedom of the individual is so prominent that the wicked quite forget the power of God, either over individuals or the race. "The fool hath said in his heart, There is no God," but the pious finds peace in the love of God, and says, "I desire not to be free without Thee; let my will be thine and thine mine."

From this culminating point of revealed freedom and concealed law, to return to the silent mineral world. While the ungodly may fall into the delusion that he is entirely independent and free, we may take the mineral kingdom as the realm of entire dependence. Here we find no notions of freedom.

Freedom, in the moral sense, can be predicated only of men; the freedom, that is, of individual action. But a first suggestion, a dawn of this freedom, an evidence that God desires not a world of uniform puppets, but of free and independent creatures, is revealed in the

realm of nature, by this infinite variety of individuals, included under one and the same generic idea.

And this is true even of the crystals of the mineral kingdom. If we find a crystal prismatic, six-sided, and terminated at each end by a six-sided pyramid, we shall find the number of surfaces, and the angles, invariable; but there is an infinite variety in the size of the sides of the prism and pyramids. No crystal is like another, any more than a leaf. And it is this very variety in size which brings out the beautiful relations* which do not appear from the model, because all its similar surfaces are of equal size.

The pupil's attention should be directed to these relations; and he will thus escape the mistaken idea that the natural crystals, instead of being really like the artificial model, are only attempts to be like it.

CONCLUSION.

It is my heartfelt wish that instruction in natural science, in former periods entirely neglected, may be increasingly given; but that it may be given in the right spirit and in the right way, so that the feelings, senses, and understandings of the young may be trained by it, from their early years, to a clear and ascertained comprehension of the creation—that other Holy Writ.

Any one imagining that such a course of training would enslave the senses, would most wrongfully confuse the right and holy exercise of the senses with their beastly abuse. For the natural philosopher uses his senses to the honor of God; and if he makes them serve base lusts and passions, he will by that means blunt and finally destroy their loftier susceptibilities. Therefore the teacher of natural history must, above all, urge upon his pupils the necessity of holiness; must contend against wicked lusts; must cultivate in them chaste and pure feelings, and childlike innocence of heart. He must seek to secure for them a consecration such as a divine would properly require in order to the pious study of the Holy Scriptures.

Such a devotional method of investigating the creation takes a more and more spiritual form. Mere mortal and bodily envelopes disappear: and immortal thoughts, rooted in God, awaken and stimulate to a higher life.

Thus also is developed the whole man. In the imaginative period of childhood, the material world, so rich in suggestions, surrounds and enchains him. His senses are being more and more developed, up to the period of adult life; they are the means for influencing his immortal soul. As he reaches the limit of earthly life, they begin to

* Such as the parallelism of the edges.

disappear; and we then complain that the powers of our eyes and ears are decaying. But let us not complain; let us herein recognize a token that in the man, his bodily senses sated with the phenomena of this earth, all things are spiritualizing and growing clearer; and that he is thus ripening and adapting himself for a higher life. All earthly things are ended; heaven is opening to us.

NOTE.

AIDS FOR TEACHING MINERALOGY.*—Besides the academical collection at Breslau, I made use in my instruction there of two smaller ones. The first consisted of only ten cases, containing specimens of all the important groups, and was intended for beginners; not only for their first inspection, but to afford some rough instruction in manipulation. *Nat experimentum in re vile*; and accordingly this first collection was of little value; so that any little injury from unskillful handling could do but small harm.

After this the pupils came to the second collection, which occupied fifty-four cases. The specimens were small, but mostly fresh and clean. In going through with this collection I mentioned the names of groups; so that the pupils obtained an intelligent and actual list of names, and a general view of all the groups. Some details of colors and crystals were omitted.

It was only after this that I introduced them to the main collection, of three hundred and fifty-five cases. In going through this collection, the pupils might, as in the others, take each specimen in their hands, but must replace it in its paper box. Where it was useless or injurious to take them in the hands, as in examining the colors, for instance, it was of course not practiced. If the pupil has been made acquainted with the careful handling of the specimens, this method does not injure them. The collection is not intended merely for the teacher's scientific investigation, and still less for empty show; but principally for the instruction of the pupils; which can not be thoroughly done without permitting this handling. This purpose of the collection also decided me not to expend its income for expensive curiosities, or the novelties of the day, which are commonly of very small relative scientific value, and to the beginner of none whatever. In the place of one unimportant scrap of euclase can be bought a large number of instructive crystals of quartz, calcareous spar, &c. This principle is of course not applicable to collections which are not at all, or not entirely, intended for instruction, and which are sufficiently provided with all common specimens, and with incomes.

The chief collection was arranged generally on Werner's plan. According to this, the pupil had to go through the groups according to their separate peculiarities; first according to color, then transparency, then luster, crystallization, &c.

To afford the pupil a scientific gratification as soon as possible, I was accustomed to permit him, if capable, to take some single group, whose crystallization was easy, and go through with it; such as lead glance, fluor spar, &c. Thus he gained a first clear comprehension of the wondrous intelligence that pervades nature. If there were two pupils, perhaps not precisely equal, but of about equal capacity, I caused them to go through the collection together; which was beneficial to both. On the contrary, nothing is more harmful than to class together in this way pupils of unequal capacity. The more capable is impeded, or wearied, by the slow progress of him who is less so; and the latter again despairs

* What is here said relates to my instructions in mineralogy at Breslau. No objection should be made respecting the richness of the collection there; for something can be done, even with smaller means.

at the rapidity of the former. I kept a diary, in which I daily entered briefly the work of each pupil, and how he had done it. This is of the greatest use in tracing and guiding their development. If the number of pupils was large, I found the following arrangement very convenient. I had all the more difficult crystals numbered, according to Hany's plates, and the number lay with each one. The pupils, who had made sufficient progress, made a written description of the crystals, and laid their paper next to the described crystal. Thus only a very brief comparison of their description with my own was necessary. If they agreed, well; if not, the pupil studied the crystal further, until the descriptions coincided—unless, indeed, there had been an error on my part. Of such an occurrence I am never ashamed. I do not desire to be to my pupils an undisputed authority, but a teacher who understands his duty to them; and his first duty is love of truth.

VIII. GEOMETRY.

[Translated from Ranmer's "*History of Pedagogy*," for the American Journal of Education.]

THE school-days of the writer fell in the latter years of the last century. At that time the opinion prevailed that but few scholars had a talent for mathematics; an opinion, indeed, which seemed to be supported by the usually trifling results of mathematical instruction. Later defenders of this department of study, however, controverted this doctrine. It is not the pupils, they said, who are deficient in capacity for learning mathematics; it is the teachers, who have not the talent for teaching it. If the teachers would follow the proper method, they would learn that all boys have more or less capacity for mathematics.

When I remember how often even the more talented of my companions fell into despair from finding themselves, with the best inclination, unable to follow the instructions of their mathematical teacher, I find myself ready to agree with these defenders.

At the end of my university course, I went to Freiberg. At the mining school there, under the able instruction of Werper, I first became acquainted with crystallography, which had inexpressible attractions for me. The more I advanced in this study, and the greater my love of it, the more clearly I saw that crystallography was for me the right beginning, the introduction, to geometry. What if this is the case, I reflected, with others also; especially for students of a more receptive tendency, who are repelled by the rigors of logical demonstrations!

No one can quite escape from himself; and the reader will forgive me if, in the following views upon elementary instruction in geology, I exhibit too much of the course of my own studies in it. He can, however, abstract what is merely personal from what is applicable to others.

And now to my subject.

Formerly geometry and Euclid were synonymous terms. To study Euclid was to study geometry; he was the personification of geometry. His "*Elements*," a school-book for two thousand years, is much the oldest scientific school-book in the world. Composed three hundred years before Christ, for the Museum at Alexandria, it was exclusively

used in ancient times, and in modern times also, down to the eighteenth century.

To this imposing permanent eminence of Euclid's "*Elements*," for two thousand years, corresponds its great diffusion among civilized and even half-civilized nations. This is shown most strikingly by the great number of translations of it. It has been translated into Latin, German, French, English, Dutch, Danish, Swedish, Spanish, Hebrew, Arabic, Turkish, Persian, and Tartar.*

With few exceptions, there is the utmost harmony in praise of Euclid. Let us hear the evidence of a few authors. Montücla, the historian, says, "Euclid, in his work, the best of all of its kind, collected together the elementary truths of geometry which had been discovered before him; and in such a wonderfully close connection that there is not a single proposition which does not stand in a necessary relation to those preceding and following it. In vain have various geometers, who disliked Euclid's arrangement, endeavored to break it up, without injuring the strength of his demonstrations. Their weak attempts have shown how difficult it is to substitute, for the succession of the ancient geometer, another as compact and skillful. This was the opinion of the celebrated Leibnitz, whose authority, in mathematical points, must have great weight; and Wolf, who has related this of him, confesses that he had in vain exerted himself to bring the truths of geometry into a completely methodical order, without admitting any undemonstrated proposition, or impairing the strength of the chain of proof. The English mathematicians, who seem to have displayed most skill in geometry, have always been of a similar opinion. In England, works seldom appear intended to facilitate the study of the sciences, but in fact impede them. There, Euclid is almost the only elementary work; and England is certainly not wanting in geometry."

The opinion of Lorenz agrees entirely with that of Montücla. In Euclid's works, he says, "Both teacher and pupil will alike find instruction and enjoyment. While the former may admire the skillful association and connection of his propositions, and the judgment with which his demonstrations are joined to each other and arranged in succession, the latter will enjoy the remarkable clearness and (in a certain sense) comprehensibility which he finds in him.* But this ease of comprehension is not of that kind which is rhetorical rather than demonstrative, and this absolves from reflection and mental effort; such an ease, purchased at the expense of thoroughness, would be beneath the dignity of such a science as geometry. And more-

* Montücla, I., 24. The list of editions and translations of Euclid's "*Elements*" occupies, in the fourth part of Fabricius' "*Bibliotheca Græca*," sixteen quarto pages.

over, Euclid himself was so penetrated with a sense of the derivation of the value of geometry, from the strict course pursued in its demonstrations, that he would not venture to promise even his king any other way to learn it than that laid down in the '*Elements*.'* And in truth, the strictly scientific procedure, which omits nothing, but refers every thing to a few undeniable truths by a wise arrangement and concatenation of propositions, is the only one which can be of the greatest possible formal and material use; and authors or teachers, who lead their readers or pupils by any other route, do not act fairly either to them or to the science. Nor have the endeavors, which have at various times been made, to change Euclid's system, and sometimes to adopt another arrangement of his propositions, sometimes to substitute other proofs, ever gained any permanent success, but have soon fallen into oblivion. Geometry will not come into the so-called 'school method,' according to which every thing derived from one subject—a triangle, for instance—is to be taken up together. Its only rule of proceeding is to take up first what is to serve for the right understanding of what comes afterward."

Thus Lorenz considered Euclid's work unimprovable, both as a specimen of pure mathematics and as a class-book. Kartner thought the same. The more the manuals of geometry differ from Euclid, he said, the worse they are. And Montücla, after the paragraph which I have quoted, proceeds to detail the defects of the correctors of Euclid. Some, disregarding strictness of demonstration, have resorted to the method of inspection. Others have adopted the principle that they will not treat of any species of magnitude—of triangles, for instance—until they have fully discussed lines and angles. This last, Montücla calls a sort of childish affectation; and says that, to adhere to the proper geometrical strictness in this method, the number of demonstrations is increased as much as it would be by beginning with any thing of a compound nature, and yet so simple as not to require any succession of steps to arrive at it. And he adds: "I will even go further, and am not afraid to say that this affected arrangement restricts the mind, and accustoms it to a method which is quite inconsistent with any labors as a discoverer. It discovers a few truths with great effort, when it would be no harder to seize with one grasp the stem of which these truths are only the branches."†

* "There is no royal road to geometry."

† This reads as if Montücla had read many of the modern mathematical works. The abridgment and alteration of the "*Elements*" began as early as in the sixteenth century, and in the second half of the seventeenth the number of altered editions increased. Such were "*Eight books of Euclid's Elements, arranged for the easier understanding, by Dechales*," (*Euclid's elementorum libri octo, ad faciliorem captum accommodati auctore Dechales*), 1660; and "*Euclid's Elements, demonstrated in a new and compendious manner*," (*Euclid's elementa nova methodo et compendiarie demonstrata*), Sené, 1690, &c. Montücla may also have had

The opinions of the admirers of Euclid seem to agree in this; that the "*Elements*" constitute a whole, formed of many propositions, connected with each other in the firmest and most indissoluble connection, and that the order of the propositions can not be disturbed, because each is rendered possible by, and based upon, the preceding, and again serves to render possible and to found the next. As a purely mathematical work, and as a manual of instruction, Euclid's "*Elements*" are so excellent that all attempts to improve it have failed.

On reading these extracts it might be imagined that all the world was quite unanimous on the subject of instruction in geometry, and that all acknowledged as their one undoubted master this author, who has wielded for two thousand years the scepter of the realm of geometry. But far from it. We find strange inconsistencies prevailing on the subject, which are in the most diametrical opposition to these supposed opinions respecting Euclid. For how can we reconcile the discrepancy of finding the same men who see in Euclid such a closely knit, independent, and invariable succession of propositions, omitting, in instruction, whole books of the "*Elements*?" If they make use of the whole of the first book, this only proves that they consider that book as a complete and independent whole. Others go as far as through the sixth book, omitting, however, the second and fifth; and still others take the first, sixth, then the seventh, and then the eleventh and twelfth, entirely omitting the thirteenth. Can a book of the supposed character of this be treated in such a way, losing sometimes five, sometimes nine, and sometimes twelve of its thirteen books?

But how, I ask again, can we reconcile such treatment with such descriptions of Euclid's "*Elements*?" If we closely examine these descriptions, however, we shall see that, notwithstanding the lofty tone of their laudations, they still lack something. All praise the thorough and close connection of the book, but nothing more. It is as if, in representing a handsome man, he should be made only muscular and strong-boned; or, as if the only thing said in praise of Strasburg Minster should be that its stones were hewed most accurately, and most closely laid together. But is there nothing in the work of Euclid to admire except the masterly, artistic skill with which he built together so solidly his masonry, his mathematical proposi-

reference to the "*New Elements of Geometry*," (*Nouveaux élémens de géométrie*.) Paris, 1667. This was by Arnauld, of the celebrated school of Port-Royal. Lacroix says of it, "It is, as I believe, the first work in which the geometrical propositions were classed according to abstractions; the properties of lines being treated first, then those of surfaces, and then those of bodies." "*Essays on instruction generally and in mathematics in particular*," (*Essais sur l'enseignement en général et sur celui des mathématiques en particulier*.) By Lacroix, Paris, 1816, p. 299. Unfortunately, I have been unable to examine Arnauld's work. By Lacroix's description, it would seem to have been a forerunner of the Pestalozzian school.

tions! Is there not very much beauty in the scientific thought, so profound, so comprehensive, and so thoroughly diffused through every part of the work? The great Kepler was even inspired by this beauty, and was exceedingly enraged at Ramus' attack on Euclid, especially against the tenth book of the "*Elements*." Ramus said that he had never read any thing so confused and involved as that book; whereupon Kepler answers him thus: "If you had not thought the book more easily intelligible than it is, you would never have found fault with it for being obscure. It requires great labor, concentration, care, and special mental effort, before Euclid can be understood. * * * You, who in this show yourself the patron of ignorance and vulgarity, may find fault with what you do not understand; but to me, who am an investigator into the causes of things, the road thereto only opened itself in this tenth book." And in another place he says, "By an ignorant decision this tenth book has been condemned not to be read; which, read and understood, may reveal the secrets of philosophy."

Kepler also further attacks Ramus, for not subscribing to the assertion of Proclus—although it is evidently true—that the ultimate design of Euclid's work, toward which all the propositions of all the books tend, was the discussion of the five regular bodies.* And Ramus has put forth the singularly rash assertion that those five bodies are not forthcoming at the end of Euclid's "*Elements*." And by thus destroying the purpose of the work, as one might destroy the form of an edifice, there is nothing left except a formless heap of propositions.

"They seem to think," says Kepler, further, "that Euclid's work was called '*Elements*' (*στοιχεῖα*) because it affords a most various mass of materials for the treatment of all manner of magnitudes, and of such arts as are concerned with magnitudes. But it was rather called '*Elements*' from its form; because each subsequent proposition depends upon the preceding one, even to the last proposition of the last book, which can not dispense with any preceding one. Our modern constructors treat him as if he were a contractor for wood; as if Euclid had written his book to furnish materials to every body else, while he alone should go without any house."

Kepler's estimate differs materially from those first given, in that he does not only praise Euclid's skill in building firm and solid masonry, but the magnificence of his whole structure, from foundation-stone to ridge-pole. But later mathematicians have found fault with Proclus and Kepler for bringing into such prominence the five regular

* Except those which treat of perfect numbers. Proclus says, in his commentary on the first book of Euclid, "Euclid belonged to the Platonic sect, and was familiar with that philosophy, and accordingly the whole of his elementary course looked forward to a consideration of the five 'beautiful bodies' of Plato."

bodies, and finding in them the ultimate object of Euclid's work. Even Montucla and Lorenz do this, although, as we have seen, they agree wholly with Kepler and others in finding that the chain of propositions in Euclid's "*Elements*" is a most perfect one, and that no proposition is stated which is not based upon a previous one. But it would have been impossible for Euclid to construct such a chain, had he not at the beginning of it seen clearly through its whole arrangement; had he not, during the first demonstration of the first book, had in his eye the last problem of the thirteenth. For no architect can lay the first foundation-stone of his building until he has clearly worked out his drawings for the whole.

The most superficial observation will show that Euclid begins with the simplest elements, and ends with the mathematical demonstration of solid bodies. He commences with defining the point, line, and surface; treats of plane geometry in the first six books, and comes to solids only in the eleventh. The first definition in this book, that of bodies, follows on after the former three. Lorenz gives us the reason why Euclid inserted between plane and solid geometry, that is, between the sixth and eleventh books, four other books. "The consideration of the regular figures and bodies," he says, "presupposes the doctrines laid down in the tenth book on the commensurability and incommensurability of magnitudes; and this again the arithmetical matter in the seventh, eighth, and ninth books."

The five regular solids, in point of beauty, stand altogether by themselves among all bodies; Plato calls them the "most beautiful bodies." We need not therefore wonder at Euclid for taking, as the crown of his work, the demonstration of their mathematical nature and of their relations to the most perfect of all forms, the sphere. In the eighteenth proposition of the thirteenth book, the last of the whole work, he demonstrates the problem. To find the sides of the five regular bodies, inscribed in a sphere. If this proposition was not the intended object, it is at least certainly the keystone of the structure.

Many things show that the demonstration of the five regular bodies, and of their relations to the cube, was really the final object of the "*Elements*." The Greeks, from their purely mathematical sense of beauty, and remarkable scientific tendencies, admired and studied this select pentade of bodies, which played a great part first in the Pythagorean and afterward in the Platonic school. But that Euclid, who seems to have been instructed by pupils of Plato, followed Pythagoras and Plato in this respect, if we are not convinced of it by the "*Elements*," is clearly enough shown by the quotation given from Proclus, and by the following ancient epigram:—

"The five chief solids of Plato, the Samian wise man invented,
And as Pythagoras found them, so Plato taught us their meaning:
And Euclid based upon them renown wide-spread and enduring."

This epigram from Psellus furnishes an indubitable confirmation of the views of Proclus and Kepler, respecting the arrangement and object of Euclid's great work.

I observed that, in former times, to study Euclid was to study geometry. This will serve as a sufficient apology for the space which I am bestowing upon the "*Elements*."

What was it, is the next inquiry, which caused the later mathematicians to vary so much from Euclid's course, and to omit whole books of his work? We will allow them to answer for themselves.

Of the first six books, and the eleventh and twelfth, Montücla remarks that they contain material which is universally necessary; and are to geometry what the alphabet is to reading and writing. The remaining books, he continues, have been considered less useful, since arithmetic has assumed a different shape, and since the theory of incommensurable magnitudes, and of the regular bodies, have had but few attractions for geometers. They are not however useless for persons with a real genius for mathematics. For these reasons, both Montücla and Lorenz recommend these five omitted books to mathematicians by profession. Of the tenth especially, Montücla says that it includes a theory of incommensurable bodies so profound that he doubts whether any geometer of our day would dare to follow Euclid through the obscure labyrinth. This observation is worth comparing with the expressions of Kepler and Ramus, above mentioned, on the same book.

Of the thirteenth book, which, with the two books of Hypsicles to follow it, treats of the regular solids, Montücla says, "Notwithstanding the small value of this book, an editor of Euclid, Foix,* Count de Candalle, added three more to it, in which he seems to have endeavored to discover every thing that could possibly be thought of respecting the reciprocal relations of the five regular solids. Otherwise, this theory of the regular solids may be compared with old mines, which are abandoned because they cost more than they produce. Geometers will find them at most worth considering as amusement for leisure, or as suggestive of some singular problem."

What would Kepler have said to this opinion?

As soon as we consider Euclid's work otherwise than as a single

* François Foix, Count de Candalle, who died in 1694, in his ninety-second year. He founded a mathematical professorship at Bourdeaux, to be held by persons who should discover a new property of the five regular solids. The first edition of Candalle's Euclid, with a 16th book, appeared in 1666; the second, with 17th and 18th books, in 1678. It is Latin, "*Auteurs Franc. Flussate Candalle*."

whole, we see at once a necessity for modeling the eight "universally necessary" books into a new manual, of reorganizing it, and accommodating it to a new object. Distinguished mathematicians have undertaken such a remodeling, mostly including as many as possible of Euclid's propositions, and even of his groups of them, in their manuals. But how, it will be asked, can a work, so compactly organized as Euclid's, be capable of being taken to pieces, and its *disiecta membra* be arranged into a new manual? The explanation is as follows:—Although Euclid set out from one fixed point to reach another, yet he did not proceed in one straight line from one to the other, without any divergence. His single propositions, and still more the groups of them, have a species of independent existence, such that they can be recomposed into new manuals, whose arrangement is wholly different from that of Euclid.

"It is with the fabric of the thoughts
As it is with a weaver's master-piece;
Where one thread governs a thousand threads,
And the shuttle flies backward and forward,
And the threads fly unseen hither and thither,
And one stroke affects a thousand combinations."

These expressions of Goethe's Mephistopheles are entirely applicable to Euclid's master-piece.

Shall we now reject these good modern manuals, and use in our mathematical studies the thirteen original books of the "*Elements*?" Even Kepler, the most thorough-going admirer of Euclid, would object to this. He defended and praised the "*Elements*" as a magnificent scientific work, but not as a school-book. He would never have recommended our gymnasiasts to study the tenth book, although he charged the celebrated Ramus with having fallen into a grievous error in thinking the book too easy, since it required intellectual exertion to understand it. Montücla, although he expressed himself strongly against a false, enervating, and unscientific mode of teaching mathematics, yet says that geometry must be made intelligible, and that many manuals have subserved this end, which he has gladly made use of in instructing; and that he would recommend the exclusive use of Euclid only to those of remarkable mathematical endowments.

But were Euclid's "*Elements*" originally a manual for beginners? Shall we compare the learned mathematicians who came from all countries to Alexandria to finish their studies under Euclid, Eratosthenes, or Hipparchus, with gymnasiasts sixteen years old? The Museum at Alexandria was at first, that is in Euclid's time, a mere association of learned men; and only afterward became an educational institu-

tion.* Euclid therefore wrote his "*Elements*" for men who came to him already well experienced in mathematical knowledge and exercises. It was because the book was not a school-book that Euclid gave his answer to the king who required him to make geometry easier.

But what was the origin of the book?

The reader may perhaps apprehend that this question will lead me into historical obscurity, and obscure hypotheses. But there is no danger.

Montucla says that Euclid, in his book, collected such elementary truths of geometry as had been discovered before him. We know, of at least some of his problems, that they were known before Euclid; such, for instance, as the Pythagorean problems. But, nevertheless, Euclid remains entitled to the credit of having performed a service of incalculable value in the form of the most able and thoroughly artistic editing.

We have already stated the idea which guided him in this task of editing; it was to proceed from the simplest elements, by means of points, lines, and surfaces, to mathematical bodies, and finally to the most beautiful of them, the five regular bodies, and their relations to the cube.

But would geometrical studies, commenced at the very beginning on Euclid's principles, have led immediately to an elementary system such as his? Certainly not. If they would, what occasion would there be for so much admiration of them, and of calling them *Elements par excellence*, and their author "*the Elementarist?*"

No man would ever have begun with a point, a non-existent thing, (*ens non ens*), and from that proceeded to lines, surfaces, and lastly to solids. Solids would rather be the first objects considered; objects of the natural vision, and the pupil would have proceeded by abstracting from this total idea to the separate consideration of surfaces, which bound solids; lines, which bound surfaces; and lastly of points, which bound lines.

After having proceeded to this ultimate abstraction, to the very elements themselves of the study, Euclid worked out his elementary system as a retrograde course; a reconstruction of solids from their elements. And this reconstruction could only be effected by the aid of precise knowledge and intelligent technical skill; of a full understanding of the laws and relations of figures, solids, &c.

Acute Greek intellects, investigating solids and figures, and subjecting them to actual vision, would of course discover many of their laws at once, and readily. Others, however, could not be perceived by intuition, but could be disclosed to the understanding only at a

* See Klüppel, on the Alexandrian Museum, 114, 228.

later period.* In examining this cube, for instance, it would appear at once that its sides were equilateral and equiangular; and that one of its horizontal sides was bounded by four vertical ones. But that its edge, diagonal of a side, and axis are to each other as $\sqrt{1} : \sqrt{2} : \sqrt{3}$ could not be perceived with the bodily eye, but appears by the help of the Pythagorean problem.

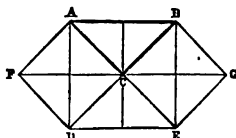
The demonstrations, as is sufficiently evident, must have begun with such as were concrete, simple, and visible, and proceeded to such as were more comprehensive, abstract, and beyond the scope of the senses. For instance, the application of the Pythagorean problem to all right-angled triangles would scarcely have been undertaken at the beginning. But in the case of isosceles right-angled triangles, inspection would show, by a very simple demonstration, that the squares of the sides were together equal to the square of the hypotenuse.† If this were proved, the question was then easily suggested, Is it true of all right-angled triangles? If a square were divided by a diagonal into two triangles, it was evident that each of them contained one right angle and two half right angles, the sum of the three being two right angles; and then the question would naturally occur, Is this true of all triangles?

In the same manner it would be necessary to proceed from the simplest and most regular solids and figures to the more complicated and less regular; from those most easily seen by the eye to the more abstract, requiring the use, not of the senses, but of the reason. When at last the most comprehensive demonstration and definition had been learned, there would be no further mention of the previous concrete cases, which had been an introduction to the study of the more abstract ones, but the cases to consider would now be those involved in the definition and demonstration last found.

It has repeatedly been observed that the teacher of a science must adhere to its proper course of development, and must in his instructions follow it more or less strictly. Every pupil ought once to follow this path, which its first discoverers and investigators worked out after

* See my "*A B C-Book of Crystallography*," (*A B C-Buch der Krystallkunde*), pp. IX., XI., XXIII., and 164; and Harnisch, "*Manual of the German Common School System*," (*Handbuch über das deutsche Volksschulwesen*), 1st ed., 1820, p. 232.

† The demonstration may be somewhat as follows:—



A B C, isosceles right-angled triangle. A B D E, the square of its hypotenuse, contains eight small triangles, and the squares on its sides together contain also eight, and all of these small triangles are of the same size and shape.

so many and long-enduring errors, but which the present pupils, with their teacher's aid, now find out in a shorter time, and with certainty.

According to these principles, to which I subscribe, I consider it natural to begin teaching geometry with treating of solids, with which it is highly probable that the actual development of the science began; and to proceed from that point, by abstraction, to the elements. It is here that Euclid's method should be adopted, and that we should proceed by demonstrations, from the elements up to solids. In the former course, it is instruction that leads, and reason silently follows; in the latter, the reason speaks, and the intuition must place faith in it.

Many mathematicians are now agreed that Euclid's demonstrative course of instruction should be preceded by an introduction of an intuitional character. In the theory of forms brought forward by Pestalozzi and his school, in particular, was discovered a preparatory course in geometry, in which intuition was the chief actor, as is the reason in geometry proper.*

Still, however, the beginning was not made with solids, but, in accordance with a method of elementarizing which was pushed even to caricature, with points—unmeasurable, dimensionless points. Lines come next, and were taught in innumerable and aimless combinations. Lastly, surfaces were discussed; for of solids Schmid's well-known Theory of Form, the predecessor of many more, scarcely spoke at all, and what little was said was not worth mentioning.†

The necessity was afterward felt of beginning with a solid—the cube, for instance; but merely with the design of showing from it the process of abstraction by which to proceed from the solid to the point. As soon as this had been briefly done, they then commonly proceeded to the combination of points, lines, &c., and to other operations, as were just alluded to. How important soever this theory of form may seem to me, and however much I may honor the intelligence, industry, and effort with which this new course of discipline was worked out by able pedagogues, still I can not possibly recognize the method which they followed as the right one.‡

What I would recommend is, that instruction in geometry should begin, not with such a brief analysis of one or another solid into its geometrical elements, but with a continued study, at some length, of many mathematical solids. And now, if solids are to be both the beginning and the end of the elementary study of geometry, the

* Part 2, p. 101.

† Diesterweg "Guide," (*Wegweiser*.) Second edition, part 2, p. 193, &c.

‡ I entirely agree with the acute and able judgment passed by Curtmann on the study of Form in common schools, and on Froebel's "eccentric proposal to use geometrical combinations as a principal amusement for children." See Curtmann's "*School and Life*," (*Die Schule und das Leben*.) p. 62.

question naturally comes up, What bodies? Shall they be those of which every stereometry treats—the prism, pyramid, sphere, cone, and cylinder? Shall it be the five regular solids?

The opinion of Montücla, already given on this point, might perhaps alarm us, even if inclined toward an affirmative. He compares the theory of the five regular bodies to ancient mines, which are neglected because they cost more than they produce. "Geometers," he continues, "will use them at most for a leisure amusement, or as suggestive of some singular problem." But such old mining works are opened again, and afford great profits; and the merest leisure sometimes is the occasion of solemn earnestness. Of many of the solids which the ancient mathematicians constructed, with scientific geometrical skill,* the originals have been found in nature in our own times; and, besides these, an innumerable multitude of other beautiful forms, in which are revealed laws of which no mathematician ever dreamed.

It is mineralogy which has opened to us this new geometrical world—the world of crystallography. With this I first became acquainted, as I have already mentioned, in Werner's school, at Freiberg. When I afterward came to Yverdun, in 1809, and made myself acquainted with Schmid's Theory of Forms, this latter appeared to me the most uncouth of all possible opposites of crystallography.

This theory of forms consisted of endless and illimitable combinations. The object seemed to be to find at how many points a line could be intersected; but no reference was made to the question whether the figures resulting from such combinations were beautiful or ugly. But, in the absence of a sense of mathematical beauty, great caution must be used in approving a course of mathematical instruction which consists principally of mathematical intuitions. Nothing of any value, as I have mentioned, was said of solids. Every thing seemed designed to keep the boys in incessant, intense, and even overstrained productive activity, without any care whether the product was of any geometrical value. A formal result, it might be said, was the chief thing sought.

But how diametrically opposite was the study of crystallography at Freiberg to this unnatural and endless production of mathematical misconceptions! It began with a silent ocular investigation of the wonderfully beautiful crystals themselves; works of Him who is the "Master of all beauty." A presentiment of unfathomable, divine geometry came upon us; and how great was our pleasure as we gradually became acquainted with the laws of the various individual forms,

* Including several of the thirteen Archimedean solids.

and their relations. Nobody thought of any special formal usefulness in his study of crystals; it would have seemed almost a blasphemy to us had any one told us to use the crystals for our education. We quite forgot ourselves in the profundity and unfathomable wealth of our subject; and this beneficial carelessness seemed to us a much greater formal benefit than could have been obtained by any restless running and hunting after such a benefit.

The opposite impressions thus received at Freiberg and Yverdon are indelibly impressed upon my mind. And I readily admit that all my inclinations drew me toward a quiet investigation of God's works; an inward life from which my actual knowledge should gradually grow. In proportion as I have experienced the blessing of this peaceful mode of activity, I find an incessant, restless, overstrained activity more repulsive to me, and I am frightened at the pedagogical imperative mood, "Never stand still!" It is to me as if all beautiful Sundays and their sacred rest were entirely abrogated, and as if I were forced to hasten forward, restlessly and forever, without once delaying for peaceful contemplation, though the road should lead through the summer of paradise.

But to return to my subject.

When, twenty-four years ago, I wrote my "*Attempt at an A B C-Book of Crystallography*," (*Versuch eines A B C-Buch der Kristallkunde*), I remembered, while employed on that common ground of mathematics and mineralogy, Schmid's Theory of Forms, and expressed the hope that a scientific crystallography, proceeding according to the laws of nature, might accomplish, in a regular manner and with a clear purpose, what the theory of forms of Pestalozzi's disciples had endeavored to do without regularity or definite purpose.

I was convinced that such a connection with the subject of crystals must give to the treatment of the theory of forms a character entirely new, and entirely opposite to that previously usual. Wherever beginners were required to practice this incessant combination and production, they would now be employed in becoming familiar with natural crystals and models of them. They should not be confined exclusively to models, lest they should fall into the error of supposing themselves to have to do only with human productions; and of imagining that there are no other mathematics except those of man. Natural crystals lead the pupil to a much profounder source of mathematical knowledge; to the same source from which Plato, Euclid, and Kepler drank.*

* Mohl's valuable work on the forms of grains of pollen shows that among them are several mathematical ones; as octahedrons, tetrahedrons, cubes, and pentagonal dodecahedrons. (Mohl's Contributions, Plate I., 3; Pl. II., 30, 34, 35; Pl. VI., 17, 18: &c.) Schkuhr had already described dodecahedrons and icosahedrons. Thus mathematical forms are found also in the mathematical world.

I will here give some details to show that proper instruction in crystallography will serve the same purpose which was sought by the theory of forms. Every solid, I would first say,* fills a certain space, and the questions to ask respecting it are,

1. What is the form of the solid (or of the space which it fills?)
2. What is its magnitude, (or the magnitude of the space which it fills?)

Similar questions arise respecting limited superficies. If now we compare two solids, or two surfaces, they may be either,

a. Alike in form and magnitude, or congruent; as, for instance, two squares or cubes of equal size. The squares will cover each other, the cubes would fill the same mold.

b. Alike in form but unlike in magnitude, or similar; as two squares or cubes of different sizes. Of two similar but unequal solids, the smaller, A, may be compared with the larger, B, in a decreasing proportion. If any line of A equals, for instance, one-half of the corresponding line of B, all the other lines of A are to the corresponding ones of B in the same proportion.

c. Unlike in form but alike in magnitude, or equal; as a square and a rhomboid of equal base and height; a square prism and a crystal of garnet, where the side of an end of the prism equals the short diagonal of one of the rhombic surfaces of the crystal, and a side edge of the prism is twice as long as the same diagonal.

d. Unlike in form and magnitude.

The theory of form, as its name indicates, is chiefly concerned with the forms of bodies and surfaces; and so is crystallography. The latter deals only incidentally with the materials of bodies, and treats chiefly of the shape of single crystals, and the comparison of different ones, with the design of discovering whether they vary from each other or not.

I was occupied many years with elementary instruction in crystallography; and from these labors resulted the "*Attempt at an A B C-Book of Crystallography*," which I have already mentioned.

In the course of this instruction I found by experience how much not only older persons but even boys of ten or twelve are attracted by these beautiful mathematical bodies, and how firmly their forms were impressed on their minds; so firmly that the more skillful of them could go accurately through the successive modifications of related forms, without using any models.

Any one who has studied elementary crystallography, as an introduction to geometry, will find this course a great assistance to the understanding of the ancient Greek geometers. He will not ask, as

* See my "*A B C-Book of Crystallography*," p. 162.

the modern mathematicians do, what is the use of investigating the regular solids? And he will find himself much better able to study in the method of the ancients; a method the neglect of which has been lamented by Fermat, Newton, and Montucla. A later writer has described this method as one which speaks to the eyes and the understanding, by figures and copious demonstrations. And he laments that the more recent mathematicians have allowed themselves to be carried to a harmful extreme by the extraordinary facility of the algebraic analysis. "In fact," he says, "the ancient method had certain advantages, which must be conceded to it by any person only even moderately acquainted with it. It was always lucid, and enlightened while it convinced; instead of which, the algebraic analysis constrains the understanding to assent, without informing it. In the ancient method, every step is seen; and not a single link of the connection between the principle and its furthest consequence escapes the mind. In the algebraic analysis, on the other hand, all the intermediate members of the process are in a manner left out; and we merely feel convinced in consequence of the adherence to rule which we know is observed in the mechanism of the operations in which great part of the solution consists."*

Speaking pedagogically, no one can doubt, after the descriptions thus given, whether the geometrical method of the ancients has the advantage, in regard to form, over the analytical one of the moderns. I have shown elsewhere how harmful it is to give the boys formulas, by whose aid they can easily reckon out what they ought to discover by actual intuition; as in the case where a pupil, who scarcely knows how many surfaces, edges, and angles a cube has, computes instantly by a formula, by a mere subtraction, what is the number of angles of a body having 182 sides and 540 edges, without having the least actual knowledge of such a body.

* An instance of the predominance of the analytic method is found in the "*Mécanique Céleste*" of Lagrange, which appeared in 1788. In this, the author says, "The reader will find no drawings in this work. In the method which I have here employed, neither constructions nor any other geometrical nor mechanical appliances are needed; nothing but purely algebraical operations."

IX. ARITHMETIC.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

THE difference between ancient and modern methods of instruction is remarkably clear in the case of arithmetic.

By way of describing the ancient method, I will cite portions of one of the oldest and best reputed of German school-books—the "*Elementa Arithmetices*" of George Peurbach.* This author was, in his time, the greatest mathematician in Germany; and one of his pupils was the great Regiomontanus.†

Peurbach's arithmetic began with the consideration of numbers. "These," he says, "are divided by mathematicians into three kinds: into digits, which are smaller than ten; articles, (*articuli*), which can be divided by ten without a remainder; and composite numbers, consisting of a digit and an integer. Unity is however no number, but the rudiment of all numbers; it is to number what a point is to a line. In arithmetic it is usual, after the manner of the Arabs, who first invented it, to work from right to left. Every figure, when standing in the first place at the right hand, has its own primitive value; that in the second place has two times its primitive value, in the third place a hundred times, in the fourth one thousand times, and so on."

The second chapter is on addition. "To unite several numbers in one, write them so that all the figures of the first place (units) shall stand under each other, and in like manner of the second place, and so on. Having arranged them in this way, draw a line under them, and then begin the work at the right hand by adding together all the numbers of the right column. The sum resulting from this

* "*Elements of Arithmetic. An algorithm of whole numbers, fractions, common rules, and proportions.* By George Peurbach. All recently edited with remarkable faithfulness and diligence. 1536. With preface by Philip Melancthon." (*Elementa Arithmetices. Algorithmus de numeris integris, fractionis, regulis communibus, et de proportionibus. Autore Georgio Peurbachio. Omnia recens in lucem edita fide et diligentia singulari. An. 1536. Cum prefatione Phil. Melancthon.*) Peurbach was born in 1423, and died 1461.

† "This philosophy of celestial things was almost born again in Vienna under the auspices of Peurbach. This whole department of learning, (astronomy,) after having lain in dishonor for centuries, has of late flourished anew in Germany, under the restoring hands of two men, Peurbach and Regiomontanus. Their very achievements testify that these two heroes were raised up, for the promotion of that branch of learning, by some wonderful power of divine appointment." This is Melancthon's opinion, as given in his preface to the "*Sphæra*" of Sacro Bosco. Comp. Montucla, "*History of Mathematics*," part 3, book 2; also Schubert's "*Peurbach*," *etc.*

addition will be either a unit, or an article, or a composite number. If a unit, write it under the line, immediately under the units; if an article, write a cipher* there, and add the number of tens to the second column; if a composite number, write the units under the units, and add the tens to the second column. Proceed in the same manner with the second column, but do not forget to add in the tens resulting from the addition of the first column. When you have finished the second column, proceed to the third, fourth, &c. When you add up the last column, you can, if the addition gives tens, set them down at once."

The instruction in the other ground rules is given quite in the same way; as is the mode of proving examples. For multiplication he especially recommends the multiplication table. "If you have not thoroughly mastered this," he says, "I assure you that, if you do not take pains to learn it, you will make no progress in arithmetic."

This may suffice to describe the style of Peurbach's arithmetic, four hundred years old; the same method has prevailed even down to our own times. It is in this study, as I have said, that the difference comes out most clearly between the ancient and modern styles of instruction. To show this in a single point, let the reader compare Peurbach's recommendation about the multiplication table with an expression of Diesterweg's. The latter says, "The ancient teachers made the famous multiplication table the basis of all arithmetic. They made it the beginning of the study, printed it in the primer, and impressed it mechanically upon the children's memories. Nowadays it plays a more subordinate part; and this single fact may show how far we have left the worthy ancients behind us in arithmetical instruction. * * * The multiplication table, with us, comes after the addition and subtraction tables, and before the division table; that is all."[†]

The following observations will state the difference between the ancient and modern methods of instruction in arithmetic.

The object of the ancient method was to enable the children to

* *Cyfrum* or *Zyphrum*; others say *Agura nihili*, or *circulus*; as Hudalrichus Regius, in his "*Epitome Arithmetice*," (1536,) p. 41. Maximus Planudes (in the 14th century) has *νῦψος* for naught. Fibonacci, a Pisan, wrote in 1202 a "*Treatise on the Abacus*," (*Tractatus de Abaco*), in which he relates that during his travels he learned the Indian art of arithmetic, by which with ten figures all numbers can be written, (*Cum his . . . Aguris, et cum signo 0, quod Arabici Zephyrum appellantur.*) (Whewell, 1, 190.) Lichtenberg (6, 272) says, "Zero (naught) is derived from *cyphre* and *cyphér*, the Latin and English for naught; and thence from the Hebrew *sepher*, to count." Menage says, "*Chifre*.—The Spaniards first took this word from the Arabs. It was *Zefro*." Spaniards change *f* into *h*; hence, *Zefro*, *Zehro*, *Zero*. When did the German *Ziffer* receive its present meaning?

[†] In the preface to his "*Handbuch*," Diesterweg says, however, "Any one desirous of multiplying larger numbers together in his head must know the multiplication table by heart. The inferior grade of computation must be facilitated by this great means of assistance, in order to avoid difficulties in the higher grade." This agrees with Peurbach.

add, subtract, &c.; an art of arithmetic was sought, not an understanding of it, a theory of it. As a foreman shows his apprentice how to do his work by categorical imperatives, First do this and then do that, without any whys or wherefores, just so was arithmetic taught, without any effort on the part of the teacher to communicate to the scholar an understanding of the things he did. Nothing was thought of except skill in operating, which was gained by much practice. This mode of instruction was made more natural by the fact that only written arithmetic was taught.

Pestalozzi and his school opposed this method of instruction, and called it mechanical, and unworthy of a thinking being. The child, they said, must know what he is doing; and should not merely perform operations without any understanding of them, according to the teacher's directions. Understanding is the chief object; the training of the intellect as a properly human discipline, without any relation to future practical life. A few of them claimed that, if the scholar acquired nothing but this intelligent knowledge, if it was done in the proper methodical way, his practical skill would come of itself; that, by the knowing about his art in the proper manner, a man becomes a master of it.*

The ancient method, which kept the pupils at unwearied drilling, trained skillful and certain mechanical laborers. The pupils operated according to traditional rules, which they did not understand, and which even the teachers themselves very likely did not understand, any more than the master-mason, when showing an apprentice how to make a right angle with a string divided by two knots into lengths of three, four, and five feet, can also explain to him the Pythagorean problem.

But although by this method the scholar was excellently well prepared for many computations, which he will have occasion for in practical life, yet he will be quite at a loss how to help himself whenever a case shall come up to which he can not apply his rule exactly as he learned to use it. This will appear when he enters upon Algebra; even in undertaking to use letters instead of figures in his much-practiced Rule of Three. Algebra requires every where a clear, abstract knowledge of arithmetical operations and relations—a just distinguishing between the known and unknown quantities which are to be sought or eliminated, and an understanding of the mode of using these in the most varying cases. But all this will be entirely wanting to the mere routinist, whose thinking is done by traditional rules founded on experience. He would in like manner

* An error which they subsequently perceived; and afterward labored at a union of knowledge and practical skill.

find himself unprovided with an intelligent method of mental arithmetic, such as requires independent work by the scholar; for what this school called mental arithmetic was nothing but an inward display of figures, and an inward operation performed upon them.

Three chief adversaries appeared against the ancient mechanical arithmetic, of whom I have just mentioned two.

The first, namely, was Algebra.* This represented special cases in a universal way; and treated special procedures in arithmetic in such a manner that the course of the proceeding—the law according to which the required quantities were found—was clearly expressed. Letters were every where used for numbers—undetermined numbers; for any letter might stand for all possible numbers.†

Thus, in algebra, the understanding and investigating of universal relations and laws appeared as opposed to mere computations, practiced according to a rule not understood, and aiming only at mechanical facility.

In like manner arose the true method of mental arithmetic, which has become so prominent, especially in later and the latest times, in the place of the usual operating upon pictures of figures within the mind. It was seen that upon this intelligent mental arithmetic must be based a right understanding of the mechanical processes of arithmetic. This was, among other reasons, because the mental method obliged the pupil to perform many operations in an order quite different, and even entirely opposed, to that used in written arithmetic.

The third adversary of the old method of arithmetic was the intuition so prominently urged by Pestalozzi and his school. While algebra took the arithmetical laws out of concrete numbers, and established them as ideas, abstractly, Pestalozzi, on the contrary, sought for means of that intuitional instruction which must precede all reckoning with numbers, and without which that reckoning must be without any proper foundation. As algebra developed itself out of concrete arithmetic, so was the idea of number itself, again, to be deduced from the bodily examination of numerable objects of various kinds. "The mother," says Pestalozzi, "should put before the child, on the table, peas, pebbles, chips, &c., to count; and should say, on showing him the pea, &c., not 'This is *one*,' but 'This is one *pea*,' &c." And he proceeds to say, "Wh'ere the mother is thus teaching the child to recognize and name different objects, as peas, pebbles, &c., as being one, two, three, &c., it follows, by the method in which she shows and names them to the child, that the words one, two, three, &c., remain always the same; while the words pea, pebble,

* I use this word, like Euler, Montucla, Kries, &c., in its wider sense.

† Kries' "*Manual of Pure Mathematics*," (*Lehrbuch der Reinen Mathematik*,") p. 72, &c.

&c., always change, as the nature of the object changes which is thus used; and by this permanence of the one, and constant change of the other, there will be established in the child's mind the abstract idea of number; that is, a definite consciousness of the relations of more or fewer, independently of the objects which are set before him as being more or fewer."*

Thus far Pestalozzi adheres to the method in which arithmetic had always been begun, in a manner strictly accordant with nature. Counting had been taught by beans, &c., and especially on the fingers. "You can count that on your fingers" is an old proverb.

He now, however, proceeds further, to artificial school-apparatus for intuition. He and his fellow-teacher, Krüsi, prepared some "intuitional tables" for this purpose. In the first, the numbers from one to ten are separated by marks: a I in the upper horizontal row, II below it, and so on, down to ten such marks for ten. And 175 pages were occupied with exercises to be taught upon these marks.

The second intuitional table is in the form of a square, divided into ten times ten small squares. The ten squares in the upper horizontal row are not divided; those in the second are halved by a perpendicular line; those of the third are divided into thirds by two such lines; and so on, to the last, which is divided into ten parts by nine perpendicular lines.

The second intuitional table is properly followed by the third in the second part of the "*Intuitional Theory*." It is a large square, divided into ten rows of ten small squares. The first of the first horizontal row is undivided, the second halved by a horizontal line, the third divided into three parts by two horizontal lines, and so on to the tenth. The ten squares of the first perpendicular row are divided in the same way by perpendicular lines, and the other squares are divided both by perpendicular and horizontal lines, (corresponding with a multiplication table,) according to their order, in a perpendicular and a horizontal row. Thus the hundredth small square, diagonally opposite that which is not divided at all, is thus divided into ten times the smaller squares, of which each is a thousandth of the large one.

The second table, preceding this, consists of thirty-six pairs of parallel lines, equal in length but divided differently. The pair A and B, for instance, are divided by points into six equal parts; but, besides this, A is divided into halves and B into thirds; the former into twice three-sixths, and the latter into three times two-sixths.

* Pestalozzi, preface to part 2 of his "*Intuitional Theory of the Relations of Numbers*," (*Anschauungstheorie der Zahlenverhältnisse*.)

For the method of using these intuitional tables in instruction, I refer to Pestalozzi's "*Elementary Books*," and to Von Türk's "*Letters from Munchen-Buchsee*."^{*} I shall here only offer a few observations on them.

By means of these tables it was sought to elucidate to the children the four ground rules, fractions, and the rule of three, even algebraically. In particular, every number was considered as composed of ones, and was referred to ones as its elementary parts. And this was done not only at first to facilitate a clear understanding, but in subsequent parts of arithmetic, and even to a wearisome extent. Instead of seven, "seven times one" was used; and again, "One is the seventh part of seven." And thus were composed so many strange, wordy problems; as "Three times half of two, and six times the seventh part of seven, are how many times the fourth part of four?"[†]

Pestalozzi should undoubtedly have the credit of calling attention, by his "*Elementary Books*," to the visual element of arithmetic, which had previously been almost entirely neglected in the schools. Since that time, this element has been much used for primary instruction, and as a means of laying a foundation by the use of the senses for subsequent insight. But at present, most of the arithmetics of the Pestalozzian school vary much from this excessive use of the senses, as is shown by their books of examples.

It is clear that there are limits to the use of the intuitional faculties. Pestalozzi exceeded these in various ways; as in the line divided into ninety parts, and a square divided into ninety rectangles, which we find in his "*Elementary Books*." What eye would distinguish, in his third table, between the square divided into nine times ten rectangles, and that divided into ten times ten, next after it?

The necessity of actual intuition at the beginning of arithmetic also led Pestalozzi into an error. "When," he says,[‡] "we learn merely by rote that three and four are seven, and then proceed upon this seven just as if we actually knew that three and four were equal to seven, we deceive ourselves, and the inner truth of this seven is not in us; for we have not that foundation in the evidence of our senses which only can make the empty word a truth to us."

But granting that I can inwardly see the picture of the statement that $3+4=7$ in marks, peas, &c., can I have the same sort of visible basis within me when I would add $59+76=135$; or, rather, $3567+4739=8306$? Are all such operations as these last then destitute of intuition? that is, are they all actually empty words and unintelligent labor?

^{*} Pt. 1, p. 16, &c., p. 51, &c. [†] *Ib.*, p. 53. [‡] "*How Gertrude Teaches her Children*."

These considerations may enable us to arrive at a correct estimate and application of the use of intuition. It is intended to assist the work of the understanding, by representations which the eye will easily take in and the mind will easily retain; and to facilitate the comprehension of numbers and their relations to each other, and afterward the methods of operating in agreement with the ideas thus received. If the intuitional powers have fulfilled their task, and if a correct understanding has been attained in the small matters at first studied, the pupil may boldly proceed to greater numbers—to numbers so great that intuition can not deal with them at all. Thus, the scholar's intuition on the subject of fractions may carry him, for instance, at furthest, to the subdivision of a line into twenty-four equal parts, and to their designation in their various different ways, as 2×12 ; 3×8 ; 4×6 ; 6×4 ; 8×3 ; and 12×2 . By means of such a line as this a clear idea can be formed of the mutual relations of fractions of different denominators; as, for instance, that $\frac{1}{3} = \frac{1}{3} \times \frac{2}{2} = \frac{2}{6}$ or that $\frac{2}{3} = \frac{2}{3} \times \frac{1}{1} = \frac{2}{3}$, &c. But the eye is not capable of taking in Pestalozzi's line subdivided into ten times ten portions. In this case the understanding has to assist the eye much more than the eye the understanding.

We have seen that instruction in arithmetic has always commenced with visual intuition, and that Pestalozzi endeavored to erect this natural proceeding into a method—a system which should proceed from a right beginning to a right end, in a right manner. With this design he published his "*Elementary Books*" and Intuitional Tables. And yet, the numerous and even excessive exercises upon these tables had really nothing whatever to do with arithmetic. After the pupil had completed the whole of these exercises, without even knowing the Arabic figures, these last may be made known to him "in the usual manner,"* and their value as dependent on their places. After this comes operations with figures.

But my experience has been, that it is precisely for the understanding of these operations that intuition is most necessary. The tiresome, inanimate marks of the Pestalozzian tables seem to me peculiarly unsuitable for children, who rather require colored or shining things, such as will easily impress their fancy. And again, if these things are to open the road to operations with figures, they must represent not mere units, but must be adapted to the decimal system—the system of Arabic figures. I made use of counters; which, if properly managed, will afford much assistance.†

A difference must be made between numbers and figures. The

* Türk, 101. † See Appendix III. on this point.

same number can be indicated by very different figures; as, for instance;

One.	Five.	Ten.	Hundred.	Thousand.
á	í	í	þ	α
I	V	X	C	M
1	5	10	100	1000

To comprehend the wondrous and almost magic power of the so-called Arabic figures, it is only necessary to work the same example with these and with the Greek or Roman figures.* The example in the note is very simple; the difference will appear more evidently on trying even a very moderately large example in "long division" with the Roman figures. And if there is such a difference even in the elementary part of arithmetic, how much greater will it be in more complicated work!

In later times this written arithmetic, so far from being an object of admiration, has, on the contrary, been so violently attacked that mental arithmetic has assumed a remarkable predominance over it. A teacher wrote a little work, entitled "*Head or Thought-Arithmetic*;" in which written arithmetic was almost synonymous with "mindless arithmetic." This reaction, however, was quite natural. We have already seen that in early times pupils were taught only the operations with figures; that they only learned to juggle according to the rules given them, and did not even know how they arrived at the results of their operations. Schiller objects to certain authors that "language did their thinking and wrote their poetry for them." In like manner the wonderful decimal system thought for these scholars, if not even for their teachers themselves.

It is at present a source of satisfaction, that by mental arithmetic this juggling business is to be brought to an end. And for certainty's sake it is strictly forbidden to perform the mental operations with the help of imaginary figures, this being really identical with written arithmetic.

But a proper regard should be paid to the latter; and it should be remembered how soon we come to the limits of mental arithmetical operations where we become obliged to use figures, letters, or visible representatives of some kind. Many persons are inclined to exceed these limits, even by force; and imagine that by the most complicated examples in mental arithmetic they can develop the scholar's capacity to the utmost extent. But a skillful mathematician of

(A) (B)
432)864(2 CCCCXXXII)DCCCXXXXXIV,II

This is but a trivial example of the magic of the decimal system; 100,000 florins are how many each to ten men? *Ans.*—10,000 florins. The fault is our own if we do not admire such a system.

Berlin has asserted, in contradiction to these, that "mental arithmetic is not actually an exercise of the understanding, because it requires the use of the memory exclusively." No one can deny this statement as to the use of the memory; nor that those virtuosos, who are accustomed to exhibit their skill in mental arithmetic, are usually of very trifling capacity in other matters.

The correct belief is that of those who, like Diesterweg and Stern, have opposed not merely the earlier mechanical written arithmetic, but have also sought to penetrate the essential principles of the mechanism of it, and to make their pupils understand, so that the latter might make use of written arithmetic with the same clear comprehension as mental arithmetic.

It was seen that the difference between mental and written arithmetic consisted chiefly in the abbreviations which are used in the latter. But the pupil readily apprehends the briefer processes of the latter, when explained to him in full by the teacher.* For arithmetical instruction is concerned with the explanation of abbreviations, from the elements up to the infinitesimal calculus; with marks and formulas invented by the most penetrating mathematical minds. To the pupil these appear to be mere magic marks and formulas, until he is made acquainted with the mode of their production. In the higher grades of the study, however, the pupil may be accustomed to the purely mechanical use of many algebraical formulas and of logarithms, in the same way in which the mechanical use of arithmetical figures used to be taught.

The question how far arithmetical instruction should be carried in one and another school, is in some cases easy, and in others difficult, to answer.

For elementary schools, Diesterweg was right in saying, "Every child should here go so far in arithmetic as to be able to solve readily in writing or mentally such problems as he will meet in common life." In the common schools there should be no prominent efforts after isolated distinction in any department.

It is much more difficult to fix a limit for arithmetical instruction in the burgher schools, because these schools are of very various characters, according to circumstances. The general future occupation of the children who attend the burgher schools has particularly great influence in this respect.

By examining a large number of school programmes, from various parts of Germany, I have found that at present most of the gymnasia proceed to about the same extent in mathematical instruction.

The Prussian ordinance on examinations, of 1834, requires "Thor-

* For an example see Appendix IV.

oughness in the theory of the powers and roots in progressions, and also in the elements of algebra and geometry,* plane and solid; knowledge of the theory of combinations and the binomial theorem; facility in managing equations of the first and second degree, and in the use of logarithms; a practiced knowledge of plane trigonometry; and especially a clear comprehension of the connection of all the propositions in the whole system of lessons."

A hundred years before, in a Prussian ordinance of 1735, no methodical knowledge was required, even of gymnasium graduates.†

On the question whether the gymnasium course should also include conic sections and spherical trigonometry, opinions differ. Only the teachers of two gymnasia declare for instruction in the infinitesimal calculus, while others are decidedly opposed to it, and certainly with entire propriety. Pupils of distinguished mathematical talents should follow their mathematical course further, at the university or at the polytechnic school.‡

There is no study where so urgent a warning is needed against the overstimulus of the scholars as in mathematics. It is known that, in Pestalozzi's institution, Schmid's influence caused this department to occupy a disproportionate space, and pushed every thing else into the background. The children were also experimented on; and were encouraged to exercise exhibitions of arithmetical skill, in the same manner as injudicious gymnastic instructors quite go beyond the limits of their art, and instruct their pupils in rope-dancing, for the sake of exhibiting their own skill in the skill of their scholars. To teach the infinitesimal calculus in a gymnasium is a similar excess.

No teacher should ever seek, by excessive stimulation, to spur on his pupils to an unnatural point of attainment, which most of them can never reach. If a few of them reach the desired summit, they usually retain their place on the peak of their intellectual Mont Blanc only a very short time, and by the most violent exertions. When the teacher ceases his efforts, or they leave school, they throw aside the study in disgust; and, according to the fixed law of nature, the excitement is succeeded by a relaxation. The teacher should be contented and pleased, if his pupils attain to some little excess of knowledge, doing so under healthy natural incentives, not too great

* The ordinance of 1812 prescribed the first six and the eleventh and twelfth books of Euclid.

† See Prof. Lentz, in the "*Annual Report on the Royal Frederic College, at Königsberg,*" (*Jahresbericht über das Königl. Friedrichs-Kollegium, in Königsberg.*) 1837.

‡ The mathematical instruction at the schools of arts and trades, and polytechnic schools, is meant to determine the future practical ability in mathematics; that in the gymnasia, rather the formal knowledge of it. The former, therefore, requires a higher degree of skill in the pupil, which also must be based upon a scientific knowledge. It must cultivate the roots of the study to develop it.

for their faculties; if they gain an entirely clear understanding and entire facility in the study up to this point. What has been thus acquired is not easily forgotten after the school-years; and, even if he goes no further with that study, he will always retain a certain degree of knowledge, which, if his teacher was intelligent and judicious, can not easily fail him.

I can not resist quoting a case given by Diesterweg, to illustrate what I have said about excessive stimulation of scholars. In speaking of de Laspé, principal of a private institution at Wiesbaden, he calls him a natural genius in didactics, who "accomplishes extraordinary things by the help of enthusiasm. For," he continues, "is it not praiseworthy and instructive, even if on other accounts to be disapproved of, to see girls of twelve occupying themselves, with genuine delight, with mathematical constructions, and, without assistance, solving problems which any one would admit to be difficult for that age. Many instances," Diesterweg continues, "have occurred in de Laspé's school, to show with what enthusiasm an energetic teacher can fill his scholars. I will relate one. High Mining Councilor K,* during a visit to the institution, at the invitation of de Laspé, gave out to the boys and girls a geometrical problem. All, great and small, teachers and scholars, went to work on it. No one discovered the solution. Thus passed the first day. On the next, all went early to work on it again, but in vain. De Laspé endeavored to renew the enthusiasm of the school, but no one found out the solution. A dull feeling of weariness and despair came over the whole institution. Nothing could be accomplished in this way. The honor of the institution seemed to be at stake; de Laspé worked, and begun and ended his efforts in bad humor. On the fourteenth day he held an evening devotional exercise for encouragement, and prayed that God would strengthen him and the members of his institution for the solution of the problem. What was the result? At about three in the morning, a boy, in his night-clothes, ran to de Laspé's bedside; he had discovered it. De Laspé sprang up and struck a light; the boy went through his operation. It was right! The whole house was called together on the instant, and the triumph made known. De Laspé was a pedagogical genius." So far Diesterweg.

But does de Laspé, according to this account, really deserve the name of a pedagogical genius? Does a teacher deserve that name, who inspires girls of twelve with a truly unnatural passion for mathematics? a man who, when his whole institution has fallen into a dull weariness and despair because neither he nor any body else in it can solve a problem which a stranger has happened to propose to them,

* Kramer. See "*H. Pestaluzzi*," by A. D., (*A. Diesterweg*.) p. 23.

makes this foolish despair the subject of an appeal to God at an evening-prayer? And do not the question, "What was the result?" and the answer, that a boy discovered the solution—do not these constitute a pietistical statement of a providential answer to prayer? The "honor of the institution, which seemed at stake," is rescued, it is true; but what honor? So far as this story goes, I can see in de Laspé only a restless pedagogical zealot,* who urges his pupils to an unnatural mental over-exertion, by especial use of the spur of vanity; who makes fanatics of them. No more monitory warning could be given of an over-excitement calculated to destroy all childlike character. Let the reader only transplant himself in imagination into the despairing, brooding, and study—the abominable fourteen days' restlessness and excitement—of these teachers and poor children, thus hunted to the death, as it were, by their own vanity.

All this seeking ended at last in the *Eureka* of a boy. But the efforts made by the teachers and pupils together show clearly how the inventive method ought never to be abused; or, rather, they show no particular method was used here at all. The teacher of a science or art ought to know, and be able to do, what his pupils are placed under his care to learn; how otherwise could he teach them? No blind man is calculated to be a guide.

Diesterweg visited de Laspé in 1817, and accompanied him and his pupils in a pedestrian excursion to the Johannisberg in the Rheingau. In passing through that region, whose beauty, famous from ancient times, has attracted to it such a multitude of travelers, to view the mighty stream, its vineyards and peaceful towns, with the wooded mountain in the background, the reader will fancy how delighted teachers and scholars must have been. But he will deceive himself.

They had to take much more care not to get lost while they were at work upon some lessons that required their whole attention. Diesterweg relates in particular the following: "In walking, algebraic problems were given out and solved, for several hours at a time; scholars as well as teachers proposing them. At evening, at the inn, after supper, they 'made language,' to use the technical term; that is, de Laspé discussed the laws of language with the pupils for several hours, no one showing fatigue or weariness. What would our boys say to this? I must publicly confess that I never saw any where so much enjoyment, so much pleasure in independent thinking and investigation."

Such "enjoyment" reminds me of the Dance of Death at Basle.

* I judge only by this story, for I know nothing further of de Laspé sufficient to found an opinion.

NOTE.

COUNTERS IN ELEMENTARY ARITHMETIC.—I used white and yellow counters, of different sizes. The smallest white ones were units, larger ones tens, and still larger ones hundreds. To these I added four yellow sizes; the smallest for thousands, and larger ones for ten thousands, hundred thousands, and millions. I did not immediately go any further.* The units served all the purposes for which beans, marks, &c., have been used; as, practice in counting, division into equal and unequal parts, &c.

In teaching written arithmetic, I found the following use of counters very convenient. The children of from six to eight years old usually knew as much about money as that, for instance, four pfennigs made a kreuzer, and six kreuzers a sechser. I took advantage of this actual experience of theirs to base my instructions. After they had learned sufficiently well to count with the unit counters, I said, "Just as the large sechser is worth six little kreuzers, so is one larger counter worth ten small ones; so we will call the large one a ten. Then I put with the ten nine more ones, successively, and so taught them to count from ten to nineteen; then I added a tenth one, and changed the ten ones for a second ten, and called the two tens twenty. In the same way I went on to ten tens. Now, just as ten ones is a ten, so are ten tens a hundred; which is again represented by a larger counter. On these exercises there may be constant exercises; such as, How many ones in two, three, &c., tens? How many ones, or tens, in one hundred? Then count out ten times ten ones, and then substitute ten tens, to the same value.

By using the counters on the table, the writing and reading of figures will be easily learned. It must only be remembered that the ones stand in the first place to the right, the tens next, &c. Then two ones may be laid down, then three tens, then a hundred, and lastly, at the extreme left, a thousand. Then the pupils may be taught to read them off, thus:—Two; thirty; thirty-two; one hundred; one hundred and thirty-two; one thousand; one thousand one hundred and thirty-two.

Writing the figures connects itself very naturally with these exercises. Supposing the children can write the Arabic figures, they may be told that they must be written exactly as the counters lie on the table; that the first figure to the right represents ones, just as the first counters to the right do; the next tens, &c. The figures should at first be written in the same order in which they are at first explained; beginning with the units.†

It can now easily be made clear what is the use of the cipher in written arithmetic. Let the pupil first lay down twenty-one in counters; two tens and a unit. But, ask him how will he express two tens and *no* unit? There must be a sign to show that there is no unit. I took, for this purpose, small round white pieces of pasteboard, which I put wherever there was no figure, whether in the place of units, tens, hundreds, &c. If it be required to lay down 302, the child placed two ones, a cipher for no tens, and three hundreds.

The orderly placing of the counters, the reading off of the number, and the writing of it should proceed together. If there are several pupils, there may be a division of labor; some laying down counters and others writing, and then each reading off the work of the other.

In this way the children will gain a knowledge of the decimal system, and of the profound wisdom with which the ancient Hindoos arranged their figures by it.‡ But the counters can be further used in explaining the ground-rules, espe-

* It would be well to have 1, 10, 100, 1000 printed on the counters; and on the other side 1, X, C, M. according to their value.

† The Roman letters on the counters can be easily used so as to show the value of a figure, one, for instance, in different places.

‡ It was not the Arabs, but the Hindoos—as was already stated—who invented the decimal

cially addition and multiplication. Under the columns of counters lay a rule, for the line, under which to place the sum. If the units add up to 10, change ten of them for a ten, put it with the column of tens, and put the remainder of 2 under the units, and so on. When with the aid of the counters the children have learned to count, the decimal system, writing and reading figures, and a more or less clear knowledge of the four ground-rules, the counters should be gradually disused.* They might be afterward used again in explaining decimal fractions.

EXPLANATION OF THE USUAL ABBREVIATED PROCESSES IN WRITTEN ARITHMETIC.—I will illustrate by a few examples what is said in the text of the means by which our teachers may endeavor to explain written multiplication and division. For instance, the example in multiplication, 6×11356 , may be worked in three different ways, as follows:—

a.	b.	c.
$\begin{array}{r} 11356(6 \\ \hline 68136 \end{array}$	$\begin{array}{r} 11356(6 \\ \hline 36 \\ 300 \\ 1800 \\ 6000 \\ 60000 \\ \hline 68136 \end{array}$	$\begin{array}{r} 11356(6 \\ \hline 60000 \\ 6000 \\ 1800 \\ 300 \\ 36 \\ \hline 68136 \end{array}$

The first, a., is the common abbreviated form; b. and c. give the solution at length, as it ought to and must be worked, before the abbreviated mode. For the solution of c., we will suppose a case. Six brothers inherit each 11356 florins. What is the entire sum? The multiplicand consists of one ten thousand, one thousand, &c., down to six units. Each heir will have one ten thousand, in all sixty thousand; also one thousand, in all six thousand; and so on; lastly, each will receive six units, in all thirty-six. Add these products together, and you will have 68136. The example b. is entirely similar to example c., except that here the multiplication begins with the units, as in the abbreviated mode. The latter will become clear by comparison with b. It will readily be seen that the abbreviation consists in this: that the product of each separate place is not written down in full; but that, when for instance the product of the ones furnishes tens, they are kept in mind and added to the product of the tens, &c.; so that the additions in example b. are performed in the mind. Thus, $6 \times 6 = 36 = 3$ tens and 6 units, which last are put in the units' place in the product. Then, 6×5 tens = 30 tens, which with 3 tens from the first product makes 33 tens, or 3 hundred and three ones, which remainder put in the tens' place in the product; and so on.

The pupil can thus be shown that the abbreviated operation in example a. must begin from the lowest place, so that the overplus from each place may be carried to a higher.

system and the wrongly-named Arabic figures. What other mathematical discovery can be compared with this? See Whewell, l., 191.

* In the arithmetics of Diesterweg, Stern, &c., other modes of making numbers visible are used. As to counters, the question is, whether they can be used in schools for a large number of pupils. Herr Ebersberger, of the Akerf Seminary, advises to fit up a large blackboard with parallel horizontal ledges or gutters of tin, in which large counters may be set up, as letters, &c., are set up in using the board to teach reading, &c. Dr. Mager remarks, in his treatise "*On the Method in Mathematics*," (*Ueber die Method der Mathematik*.) that he has used counters in teaching. He says, (p. xviii.) "The second stage brings in the decimal system, first with counters and then with figures. The smallest counters represent units, a larger size tens, the largest hundreds. It is a pleasure to see how the children can use the counters to add, multiply, subtract, and divide. When they can work both with counters and mentally, nothing is easier than to work the same problems in figures; the greater convenience of the written method induces the children to learn it quickly."

If the abbreviated mode of multiplication has been mechanically learned, still more has the abbreviated mode of dividing "over the line." In this, great heaps of figures are carefully piled up together, and a mistake in the construction would cause an error. Take, for example, $7860 \div 12 = 655$. The work is done thus: write the dividend and the line at the right hand; write the divisor, 12, under 78; ask not how many twelves in 78, but how many ones in seven. Try with seven times; $7 \times 12 = 84$, it does not go; then with 6; it will go; write 6 at the right of the line; six times one from seven leaves one, which write over the seven; then say, twice 6 is 12, from 18 leaves 6, which place over the 8. Now make another divisor by writing 1 under 2, and another 2 next the 2, under 6, and make 66 the next dividend. Then, 1 in 6 5 times; write 5 at the right of the 6 in the quotient; 5 times 1 from 6 leaves 1, which write over the upper 6; then, twice 5 is 10, from 16 leaves 6. Then remove the divisor along again; and say, 1 in 6 5 times, 5 from 6 leaves 1, twice 5 is 10, 10 from 10 leaves nothing; and set the second 5 at the right hand in the quotient. As the numbers are used, they are struck out. There is not the least effort to understand the work. When it is completed it is proved by multiplication; and, if wrong, there is no intelligent endeavor to find the error, but the operation is to be repeated.

X. PHYSICAL EDUCATION.

[Translated from Baumer's "*History of Pedagogy*," for the American Journal of Education.]

PHYSICAL EDUCATION includes,

1. Care of the health.
2. Inuring to endurance and want.
3. Training in doing; in bodily activity. Gymnastics.*
4. Training of the senses, especially of the eye and ear.

I. CARE OF THE HEALTH.†

The realists have paid especial attention to the care of the health; such as Montaigne, Bacon, Locke, and Rousseau.

At a later period, Hufeland's "*Art of Preserving Life*" has had much reputation. Much of what he says relates to people whose nerves are disordered by overexertion, and is useful for the recovery of such.

Care of health includes, first, diet. The most harmful food had become even customary among us, old and young; and it was at a late date that we began to examine the operation even of the most usual articles of diet. The temperance societies, for instance, have come out all at once against brandy, and its numerous family. All such measures have influenced the diet of the young, but have not had a thorough operation on it. Who does not know how many parents now give their young children coffee every day; and how extensively the children drink tea.

Warnings enough can not be given against the frequenting of the stomach-destroying confectionery-shops.‡ Another fact of the same kind is the sight of even boys walking about with tobacco-pipes and cigars in their mouths.§

Clothing.—Rousseau, and the Philanthropinists, his followers, were the first who declared war against unsuitable modes of clothing

* Bacon, in a section on Athletics, says, "Endurance, both of active exertion and of suffering. Constituents of active exertion, strength, and quickness; enduring suffering is either patience under indigence or fortitude in pain" (*De Augm. Scient.*, 4, 2, 113.)

† I have already treated of the education of the youngest children.

‡ This evil increases in Berlin, every year. In the time of the Turning societies, therefore, they and the cake-bakers were utterly at variance.

§ And have any good results followed from the efforts of the health-police against the sale of opium-cigars, for instance, which were openly vended at the Frankfort fair! Wee to all people who learn to love that poison!

children.* The Turners introduced an appropriate, convenient, and healthful costume; and endeavored at the same time to oppose the foolish vanity of a change of fashions. I shall say nothing at all of the fashions as prevailing among women. To appear new is always the thing sought after, even if a new monstrosity is the result. The sense of beauty seldom betrays, but yet we have seen the hoop-petticoat and the French rococo style reappear.

When shall we cease to make children sleep in deep, stupifying feather-beds, and in unventilated chambers?

Early to bed and early to rise, says the old proverb. Excessive mental labor is harmful to all, especially by night, and is utterly destructive to the young, and most of all when drowsiness is kept away by coffee, &c. Such a course results in a truly horrible condition of overstimulation, in which even a healthy person completely loses control over himself.

The body is a temple of the Holy Spirit. How do those desecrate that temple, whose god is their belly! And it is most fearfully defiled and destroyed by the withering secret sins which have made such fearful progress amongst our youth. But our educators do little to avert the evil—they rather pour oil upon the fire. When, to the influence of stimulating drinks, excessive eating, hot feather-beds, we add that of provocative dances, plays, and romances, and of those indecent pictures which make such deep impressions on the minds of the young, and destructively stimulate and entice during waking and sleep, who can wonder that such sins gain influence over our youth, and destroy them, soul and body? Do we make serious efforts to prevent these influences? Do we not rather behold them with indifference; arranging the dances ourselves, taking the children to the theaters when Kotzebue's and other loose pieces are acted? Is it not so? And does not all the world cry out, Pietism! if any one says a word against this destruction of souls?

But the question has been asked, almost despairingly, by many, How are these secret sins to be prevented? First, by not giving them any assistance by making the young more susceptible to them, by rendering them morally and physically weak and corrupt. And, second, by positive discipline and strengthening of the body. The best protection of all, however, is an education in the fear of God; a means which may avail even when the destruction has gained a footing. Those who are corrupted in this way must be managed according to their peculiarities. To shameless cowards the truth should be told, that their habit is suicide; and that, if they go on in

* See the chapter on him.

it, they have already lived most of their days. The sight of any one who has become idiotic by onanism produces a powerful effect on boys. There are also, however, cases where it is better to encourage, and to give assurances that, upon a cessation of the habit, the body will become strong again, though on that condition only.

Lying goes hand in hand with this devilish secret vice; and bodily and mental filth, and atrophy.

Lorinser's article "On the protection of health in the schools" directed the eyes of educators to the startling condition of the health of the pupils in our gymnasia. It was asked, What are the universal sources of the destructive physical condition of the schools, that make their pupils die faster than other German youth? Lorinser answered, The evil is based in the number of studies, the hours of instruction, and the home labor.

The number of studies, especially since real studies have made way into the gymnasia, has increased since that time. Still, several Prussian gymnasium programmes indicate that the number of hours of instruction was as great formerly as now; because as much time was devoted to their fewer studies as to our more numerous ones. Thus the reason of the evil should not be found in the number of hours of instruction, unless we answer that the scholars of the present day are less capable of study than they were then. Nor should the number of studies be blamed, without further examination; for fewness of studies has its evils too. Ratich taught "Only one thing at once. Nothing is more injurious to the understanding than to teach many things at the same time; it is like cooking pap, soup, meat, milk, and fish all in the same kettle, at once. But one thing should be taken up in order after another; and only when one has been properly attended to should another be entered upon. A single author should be selected for each language, from whom it should be learned. When he is thoroughly understood, and as it were quite swallowed down, another may be read. Nothing new should be taken up until what went before is understood quite thoroughly, and to entire sufficiency."

On this it has been remarked,

"Is this really according to the 'course of nature?' Would it be natural to eat broth alone, or fish alone, for eight months together, and even longer, as Ratich's pupils studied Terence? Is not a variety of reading matter, as in Jacobs' excellent readers, much more suitable to it? Just as we never eat one thing alone, but bread with meat,

* This appeared, in 1895, in the "*Berlin Medical Gazette*," (*Berliner Medicinisches Zeitung*.)

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II. INURING TO ENDURANCE AND WANT.

What has already been said indicates clearly enough that nothing usually done in this direction by parents; but quite the contrary. It is usual to enervate the children, to seek to satisfy all their desires. Nor should this astonish, in an age when the most fleshly epicureanism prevails. How could strong self-denial and self-command grow out of such an idle, pleasure-loving home-life? These virtues are to most persons bitterness and folly. Woe to humanity, when nothing is desired except mere undisturbed animal enjoyment, and when all nobler aspirations pass for folly!

It is difficult to proceed methodically in the more passive portion of bodily training. This must be lived rather than taught. Boys in the country, who run about out-doors, in the hottest as well as in the coldest weather, in rain and snow, become hardened against wind and weather, without their parents or teachers knowing any thing of it. But if a child grows up in a great city, where it is probably half an hour's walk and more to the nearest city-gate, especial pains must be taken to see that he goes into the fresh air every day. For this reason gymnastic establishments are an especial need of large cities.

It is important that the child should become inured to wind and weather during the first years of his life.

Journeys on foot afford the best opportunity for hardening and privations of all kinds. Bad weather, bad roads, miserable inns, and innumerable other inconveniences, annoy even the most fortunate traveler. But all this will be endured, especially in the company of companions, not only with patience but with superabundant delight. He who makes some sour faces at rain and bad food suffers double.

It is to be lamented that steamboats and railroads have made such a destruction of journeys on foot. Such a flitting across countries is entirely useless. It does not strengthen the body; one who goes in one day, by railroad, from Manheim to Basle, seems to himself afterward to have dreamed of an exhibition, where the Rhine and Neckar, the Black Forest and the Vosges, Heidelberg, Carlsruhe, Strasburg, &c., were all passed rapidly before his eyes—all is to him a transitory cloud-picture.

In war, young persons who have been hardened, who are easily satisfied, and not corrupted by luxury, are far superior to their opposites. The latter are quite without self-control, and as if without their senses or courage, upon being summoned to turn out a little early in the morning, especially after having a cold night in the open air.

III. TURNING.

It is well known how highly the Greeks valued gymnastics, and

how the Roman boys practiced bodily exercises as a preparation for war. We are equally well acquainted with the bold strength and activity of the ancient German nations, and their chivalric renown in the middle ages. As the cities became prominent, the citizens were not behind in this respect, and there grew up among them fencing-schools for the mechanics, privileged by the emperor.*

That bodily exercise is an important part of the training of the young was a truth recognized by Luther; but which, since the sixteenth century, has been made most prominent by those already mentioned as realists.

Luther says,† "It was right well thought of and ordered by the ancients, that the people should exercise themselves, and learn something useful and honorable, so that they might not fall into rioting, vice, gluttony, drunkenness, and gaming. Therefore these please me the best of all—these two exercises and amusements, to wit, music and tilting, with fencing, wrestling, &c.; whereof the first drives away care of heart and melancholy thought, and the second gives well-proportioned and active limbs to the body, and keeps it in good health, by jumping, &c. But the most weighty reason is that people may not fall into drunkenness, vice, and gaming, as we see them, sad to say, in court and in city, where there is nothing except 'Here's to you! Drink out!' And then they gamble away perhaps a hundred florins, or more. Thus it goes, when men despise and neglect such honorable exercises and tiltings."

Luther observes, very correctly, that an active, healthy man, skillful in his exercises, and who takes pleasure in them, will for that very reason energetically withstand the loose and vicious life of mere pleasure-seeking, while the sensual at once give up to it.

Montaigne, the realist forerunner of Rousseau, blames those weak parents who can not bring themselves to keep their children on simple food, to see them covered with sweat and dust from their exercises, riding a spirited horse, receiving a smart thrust in fencing, or a kick from the discharge of a gun. "He who desires," he says, "to see his son a strong man, must certainly not make him effeminate in his youth, and must often set aside the rules of the physician. It is not enough to make his mind firm; his muscles must be made firm too. I know well how my own mind is tormented by its companionship with so weak a body, which depends so much, and bears so heavily, upon it."‡

Rousseau says, "The body should be strong, that it may obey

* See Jahn's "*Turning System*," (*Turnkunst*), p. 278.

† Walch, XXII., 2280, 2281.

‡ *Essays*, I, 299—301.

the soul—a good servant should be strong. The weaker the body is, the more it commands; and the stronger, the more it obeys.* A weak body weakens the soul." "If you would develop the understanding of your pupil, develop the powers which his understanding is to govern; incessantly train his body. Make him strong and healthy, that you may make him wise and intelligent; make him work, run, cry out, always busied about something; let him be a man in strength, and then he will be one in reason."†

We have already seen how these counsels of Rousseau were followed in the Dessau Philanthropinum, where they practiced gymnastics, and took pedestrian journeys with the boys. Rector Vieth, of Dessau, a man of great skill in many bodily exercises, published an "*Encyclopædia of Bodily Exercises*," (*Encyklopædie der Leibesübungen*.)

But the greatest attainment was made at Salzmann's institution, under Guts Mutha; who wrote a work on gymnastics, which gained a wide influence.‡ It was founded upon "*Emile*."

The chief principle of physical education is, according to Guts Mutha, "Train all the powers of the physical man to the point of utmost possible beauty and usefulness of the body, as of the teacher and servant of the soul."§ Gymnastics is "a system of exercises for the body, intended to perfect it."||

Guts Mutha, with great care and judgment, worked out this system of discipline in the fullest detail; and at Schnepfenthal there was serious earnestness in the department of physical training. The children played, not only for the sake of relaxation from the labor of the school, but their bodily exercises were made a necessary part of their intellectual training, and an indispensable department of instruction in the school.¶

Meierotto, the eminent Berlin rector, erected, in 1790, a roomy

* Just as Marcellus Palingenius had said:

"Corpus enim male si valeat, parere nequibit
Præceptis animi, magna et præclara jubenit."

† I have said more about gymnastics, and errors in "*Emile*," in my chapter on Rousseau, q. v.

‡ "*Gymnastics for the Young*," (*Gymnastik für Jugend*.) By Guts Mutha. Second edition. Vienna, Doll, 1806. Prof. Kumpff issued a third edition, with many additions. The first edition was translated into Danish, English, and French.

§ *Gymn.*, p. 31.

|| *Id.*, p. 13.

¶ I shall hereafter discuss Guts Mutha's instructions for the cultivation of the senses. In 1817 he published a work on Turning, which set forth the relations between Turning and collective exercises. Turning has no more reference than school instruction has to any particular class; but seeks a general development, equally beneficial in any condition of life. Turning is to develop the bodily independence of individuals; exercising, to make them efficient members of a body. Games, in which a company of Turners put forth free, graceful, general exertions, are much preferable to a stiff exercise under direction of a subaltern. Skillful Turners can very quickly learn the infantry manual. It is very good to teach soldiers the Turners' exercises; but it requires instant attention when the Turners begin to play soldiers.

exercising-place, in connection with the Joachimsthal Gymnasium, including among other things a swinging-tree; and this may be considered a forerunner of the subsequent Turning organizations in Berlin. At the repeated request of Meierotto, King Friedrich Wilhelm II. gave 80,000 thalers (about \$22,500) toward the purchase of the ground.*

Fichte, in his orations to the German nation, strenuously recommended bodily exercise, and cited Pestalozzi. He says, "Nor must another subject, brought forward by Pestalozzi, be omitted; namely, the cultivation of the bodily activity of the pupil—which should go hand in hand with the mental. He requires an A B C of this department. His most important observations on the subject are as follows: 'Striking, carrying, throwing, pushing, drawing, whirling, wrestling, swinging, &c., are the simplest bodily exercises. There is a natural order of succession from the beginning of these exercises up to a complete knowledge of them; that is, to the highest degree of activity, which makes certain the hundred applications of striking, pushing, swinging, and throwing, and gives certainty of hand and foot.' According to these views all depends upon the natural order of study; and it will not suffice to begin blindly and arbitrarily with any exercise whatever, and then to assert that we have a physical education, as the ancient Greeks had. In this respect every thing is yet to be done; for Pestalozzi did not prepare an A B C of this department. But such a one must first be prepared; and, to do it properly, there is needed a man equally at home in the anatomy of the human body and in scientific mechanics; who unites with this knowledge a high grade of philosophical character, and who is thus fitted to bring to a condition of symmetrical perfection the machine which we may consider the human body as intended to be; and so to conduct every step in the only possible right course as to prepare and facilitate every subsequent one, and thus not only not to endanger the health and beauty of the body and the powers of the mind, but to strengthen and increase them, and thus to develop this machine from every healthy human body. The indispensableness of this department, in an education professing to train the entire man, and claiming to be especially appropriate for a nation seeking to recover and afterward to maintain its independence, needs no further mention to be perfectly clear."† Pestalozzi's institution did not accomplish what Fichte expected of it in respect to bodily exercise; but among his hearers there was one who was perhaps influenced by these very

* "Attempt at an Account of Meierotto's Life," (*Versuch einer Lebensbeschreibung Meierotto's.*) By Brunn. Berlin, 1802, p. 312, &c.

† "Oration," &c., pp. 171, 172. "Weekly for Human Development," (*Wochenschrift für Menschenbildung.*) Vol. 2, No. 11.

addresses to his distinguished labors for gymnastics; namely, Freidrich Friesen.*

Bodily exercises were commenced at Yverdun in 1807; and there is an account of the mode pursued, and of the views entertained on the subject, in the first volume of Pestalozzi's "*Weekly for Human Development*."[†] This account contains much that is correct and well worth consideration, and also many errors. It is true that the body should not be developed in a partial manner, that is, not for fencing or jumping alone; but that the gymnastics pursued should aim at a harmonious total development of the whole. The bodily ill condition of manufacturing operatives is also well described.[‡] "Manufacturing labor," it says, "is undermining the physical strength of our people still more than all this. 'Stand up there, boy, at the carding-table; girl, sit at the cotton machine, or the embroidering machine; spread your colors from morning to night, or turn your wheel, or sew, from morning to night; and I will pay you more than a farmer or his wife will earn with their hacking and grubbing.' Thus have our poor been addressed, for forty or fifty years; but they did not say, This one-sided sort of occupation will make you crippled and sickly. They did not say, When the cotton manufacture ceases to prosper, when power-looms are invented, when embroidery goes out of fashion, you will be left with your distorted hand, your weakened bones, and injured digestion, as unfit to learn any other manufacturing as to use the bill or the axe. You will live out your old age a worn-out and hungry beggar. You will know nothing except what you have learned, and you have sacrificed your general strength of body and its cultivation to a one-sided and crippling occupation, and to its deceptive profits. Examples of such destruction have long been before our eyes; but white bread, bacon, wine, brandy, and insinuating manners make a deeper impression than all these dangers. And every thing that was bad, on the part of the parents, drove the children, even down to the youngest, to these carding-tables and machines. Why did these wretched people make such sickly creatures of their children? It was because they shared with them the white bread, and bacon, and wine, and brandy that they earned. In many places the miserable school-rooms had already prepared the children for the miserable factory-rooms. The parents took them out of the former and drove them into the latter, where they would at least earn them something to eat. Thus the number of sickly people increased in the land to thousands. But now they no longer receive their wages,

* See the extracts below, from Jahn's preface to the "*Turning System*."

† Nos. 3—6, from 3d June, 1807, onward, pp. 33—37.

‡ *Ib.*, pp. 43, 50.

or their white bread and bacon: but these miseries of the land have resulted in this; that our people and their physical condition, in many places, need, more than elsewhere in Europe, the assistance of a wise government, and of the power of the human heart, which is now reasserting itself, against the consequences of this manufacturing selfishness, and their depth of physical degradation and weakness."

But the higher classes had become hardened, and had lost all natural sensibility and sympathy.* "But it is not the only evil," the article continues, "that innumerable numbers of our poor are fallen into a condition in which they look more like ghosts than like men. The consequence of these errors, as to what we physically need and should be, have introduced, even into the minds of our wealthy and healthy people, an absurdity and weakness which is shown by singular peculiarities. In many places, if you would be reckoned among the honorable and respectable part of the community, you must not, even in the hottest weather, take off your coat and carry it on a stick or on your arm. And your children must, all summer, wear stockings, and have a cap on their heads; must not climb trees, nor jump over ditches, &c. And, in the same places, the most unreasonable stiffness of etiquette has arisen from these notions of maintaining respectability. You must not cut wood before your door, even if you might escape a fever by doing so. The physical degradation, which reached its hight by means of the cotton and silk manufactures, had commenced before, in the age of universal perukes and small swords. This was the period which laid the real foundation of our physical troubles, in high and low ranks." And the discontinuance of the popular festivals is justly stated to have aided in producing this unhealthy physical condition. The article says,† "A new and arbitrary and unintelligent police interferes with all the pleasures of the young. The national festivals, which expressed the powerful ancient popular spirit, began to be disused; they were gradually driven away from our plains, and forced back among the mountains. And even among those hights they became degraded. They are no longer an expression of the strength of the people, a means of elevating and distinguishing the strong men of the land, or objects of popular attention and confidence. They sank down to mere paid exhibitions for strangers looking for exhibitions of skill, and for the rich who paid largely for them. And if we should to day endeavor to renew them, without renewing our people themselves, they would still not have their ancient appearance. They would be unworthy of our ancestors; but for us, as we are, satisfying, entertaining, and misleading to our wish."

* *Ib.*, pp. 50, 51. † *Ib.*, p. 51.

* * * "It is such a bodily training as the children of our ancestors had and enjoyed that must be given to our children; and the spirit of their popular gymnastics must be raised up again. But this is no partial spirit; it submits to no influence from the popular festivals. On the contrary, these, if genuine, are only the expression of the prevalence of it. It must be just as universally active and visible in households, in schools, in the labor of the field, in Sunday sports, and in amusements, as on the Alps, and at the shepherd's festivals. It must appear in the opinions of the people respecting their corporeal necessities, and in their care for them. The attainment of this object is entirely impossible, unless there is awakened in the young, from childhood up, and made universal, a lofty, active, and independent sense of power; and this will inspire the child, of itself, to all which is desirable for the salvation of the fatherland."

Who would not subscribe to these views of Pestalozzi's? But who can approve of the method of teaching gymnastics in his institution? The same article goes on to say,* "The essence of elementary gymnastics consists in nothing else than a series of exercises for the joints, by which is learned, from step to step, all that the child can learn with respect to the structure and movements of his body, and its articulations." And again,† "He can acquire this knowledge in the quickest and easiest way by means of these questions, What motions can I make with each separate limb of my body, and with each separate joint of it? In what directions can these movements be made, and in what circumstances and positions? How can the movements of several limbs and several joints be combined together?"

Would it not be imagined that this was a system of gymnastics for jointed dolls? The objects of it have joints, and nothing but joints; and what is sought is, to find what their joints will do, not what their flexibility of body will do.

There now follow some methodical exercises; not of the body, but of the joints. A, movements of the joints of the head; B, of the body; C, of the arms; D, of the legs. Each separate joint is first to be exercised by itself, and then in connection with limbs whose joints have already been exercised. No joint is omitted; in the arms, for instance, are exercised the elbow-joint, the wrist, and the finger-joints. Of the last he says, "Here also the connection and separation of the movements must receive special attention."

In short, we find in the gymnastics of the Pestalozzian school, as in their other educational departments, an unreasonable share of elementarizing; in the present case even reaching an obvious degree of

* *Ib.*, p. 64. † *Ib.*, p. 69.

caricature, at which an indifferent spectator might laugh, but at which the weary, overdrilled children would probably cry.*

We now come to a man better fitted than any of his predecessors to lay out a new course for bodily exercises, and who did actually lay out such a course. This was Friedrich Ludwig Jahn.

In his work, "*The German Turning System*," (*Die Deutsche Turnkunst*),† he gives a history of his undertaking. This is so peculiar, and so characteristic of this remarkable man, and his useful labors, that I shall give the following extracts from it:—

"Like many other things in this world, the German Turning system had a small and insignificant beginning. In the end of the year 1809 I went to Berlin, to see the entry of the king. At that celebration a star of hope arose upon me; and, after many errors and wanderings, I became established here. Love to my fatherland, and my own inclinations, now made me a teacher of youth, as I had often been before. At about the same time I printed my '*German Nationality*,' (*Deutsches Volksthum*.)

"During the beautiful spring of 1810, a few of my pupils began to go out with me into the woods and fields on the holiday afternoons of Wednesday and Saturday, and the habit became confirmed. Their number increased, and we had various youthful sports and exercises. Thus we went on until the dog-days, when the number was very large, but very soon fell off again. But there was left a select number, a nucleus, who held together even during the winter, with whom the first Turning-ground was opened, in the spring of 1811, in the Hasenheide.

"At the present time, many exercises are practiced in company, in open air, and before the eyes of all, under the name of Turning. But then the names Turning system, Turning, Turner, Turning-ground, and the like, came up all at once, and gave occasion for much excitement, scandal, and authorship. The subject was discussed even in the French daily papers. And even here, in our own country, it was at first said, The ancient German ways have brought forth a new folly. But that was not all. Unfavorable opinions sprang up, from time to time, as numerous as the sands of the sea. They had never any reasonable ground, and it was laughable to see how they opposed with words that whose works were speaking so plainly.

"During the winter we studied whatever could be got on the subject. And we reflect with gratitude upon our predecessors, Vieth and

* This system of gymnastics teaches the exercising of every joint of the body, just as the "*Book for Mothers*" teaches the knowledge of them.

† Jahn published this work, in connection with Eiselen, at Berlin, in 1816. Its motto was, "The arts are easily lost, but are only found again with difficulty, and after a long time."—*Albrecht Dürer*.

Guts Muths. The stronger and more experienced of my pupils, among whom was my present assistant and fellow-laborer, Ernst Eisele, made a very skillful use of their writings; and were able, during the next summer, to labor as instructors in Turning. Among those who then devoted themselves especially to swinging exercises, and afterward assisted in the full and artistic development of them, and even became thorough masters in them, were Pischon and Zeuker, who fell, on the 13th of September, 1813, at the Göhrde.

"In the summer of 1812, both the Turning-ground and system of exercises were enlarged. They became more varied, from Turning-day to Turning-day; and were mutually developed by the pupils, in their friendly contests of youthful emulation. It is impossible to say in detail who first discovered, tried, investigated, proved, and completed one or another exercise. From the very beginning, the Turning system has shown great community of spirit, patriotic feeling, perseverance, and self-denial. Every extension or development of it was used for the common good. And such is still the case. Professional envy, the absurd vice of selfishness, meanness, and despair, can be charged to no Turner. August Thær, the youngest brother of a Turning-group of three, at that time invented sixty exercises on the horizontal pole, which he afterward increased to a hundred and thirty-two. While Thær was taking care of a sick brother in the field, during the war, the same epidemic carried him off, in 1814, of which his brother recovered. He had before that time assisted in the establishment of a Turning-ground at Wriesen, on the Oder. Toward the end of the summer exercises of 1812, a sort of association of Turners was formed, for the purpose of the scientific investigation and artistic organization of the Turning system in the most useful and generally-applicable manner. This lasted during the whole of that winter in which the French were frozen up, during their flight from Moscow. In this association, the place of manager was, according to my wish, filled by Friedrich Friesen, of Magdeburg, who had devoted himself especially to architecture, natural science, the fine arts, and education; who had studied industriously under Fichte, and in old German with Hagen; but also, above all, knew what the fatherland needed. He was then employed in the teachers' and educational institution of Dr. Plamann, which, though not of great reputation, has educated able teachers for the fatherland. Friesen was a handsome man, in the fullness of youth and beauty, perfect in soul and body, innocent and wise, and eloquent as a seer; a very Siegfried, full of gifts and grace, and beloved alike by old and young; a master of the broadsword—quick, bold, firm, sure, strong, and unwearied, after his hand had closed upon the hilt; a strong swimmer—for whom no

German river was too broad or angry; a skillful rider on any kind of saddle; and an ingenious practitioner in Turning, which owes much to him. He had no hesitation in advocating, in his free fatherland, whatever his soul believed. He fell by French treachery, in a dark winter night, on the Ardennes, by the shot of an assassin. No mortal blade would have conquered him in battle. There was none to love him and none to sorrow over him; but as Scharnhorst has remained among the old, so has Friesen among the young, the greatest of all.

"On the king's proclamation of February 3d, 1813, all the Turners capable of bearing arms entered the field. After long persuasion, I succeeded, at Breslau, in inducing Ernst Eiselen, one of my oldest pupils, to take charge of the Turning institution during the war. Still, it was after a hard conflict with himself that he remained at home, although doctors and soldiers alike represented to him, and his own experience daily proved, that, in consequence of a long previous illness, and bad medical treatment, the hardships of the war must necessarily be too much for him. I myself accompanied Eiselen from Breslau to Berlin, at the time when the Prussian army commenced its march, and the capital was already freed from the French; and introduced him to the authorities and the principals of schools, who promised him all manner of co-operation, and who have ever since shown confidence in him. Since that time, Eiselen has been at the head of the Turning institution during the summers of 1813 and 1814, and the intervening winter, and has conducted the exercises of those who were too young to carry arms.

"At the end of July, 1814, I returned to Berlin, and passed the rest of the summer and the first part of the winter in laboring industriously for the improvement of the Turning-ground. During the autumn, I had erected a climbing-pole, sixty feet high; a useful and necessary apparatus for climbing, and, in a level country, indispensable for training the eye to long distances. In winter, when the volunteers returned, bringing many Turners with them, the associated discussions upon the Turning system were renewed. The exercises of all the summer were considered and discussed, and the subject elucidated by argument.

"On the escape and return of Napoleon, all the Turners able to bear arms volunteered again for the field; only two who had fought during the campaigns of 1813 and 1814 remaining at home, from the consequences of those campaigns. The younger ones, who remained behind, now took hold of the work again, with renewed zeal. During the spring and summer of 1815, the Turning-ground received still further improvements and enlargements.

"In the following autumn and early part of winter, the Turning sys-

tem was again made the subject of associated investigation. After the subject had been ripely considered and investigated in the Turning council, and opinions had been compared, experience cited, and views corrected, a beginning was made in collecting in one whole all the results of earlier and later labors on the subject, and all the separate fragments and contributions relative to it; a labor which has lastly been revised by my own pen.

"Although it was only one architect who at first drew the plan, yet master, associates, pupils, and workmen have all labored faithfully and honestly upon the structure, and have all contributed their shares to it. These shares can not now be separated again. Nor shall I be so unreasonable as to praise the living to their faces.

"This is a brief account of my work, my words, and my book. Neither of the three is perfect; but the book may serve to promote a recognition of its ideal. It is put forth only by way of rendering an account to the fatherland of what we have done and endeavored.

"This information will be welcome to many educators and teachers, friends of youth and respectable people, who know well what are the needs of the fatherland. And our former pupils, scattered throughout all ranks of civil life, will gladly hear an account of the present state of the system. From all sides have come repeated requests for a work on Turning. To this desire we have responded in writing as well as the circumstances and our own abilities would permit. We have held an active correspondence, even to the distance of beyond the Rhine and the Vistula. We have sent copies of portions of the third section to all who applied for them. The increasing diffusion of the system, and of improvements in it, are so rapid that it is impossible for the work to be perfectly complete in it. It was impossible for us to remain indifferent to the fact that the German Turning system, developed and brought out with so much labor, would receive injury from any half-knowledge, careless writing, or half-done work. From mere hearsay and looking on one can no more write on Turning than the blind on colors."

With the Turning system came up a peculiar language. This must be understood by any one who intends to acquire a full knowledge of Jahn and his system. He says, in speaking of it:—

"In science or art, the German language will never leave those who know and admire it in difficulty. The proper words will never be found wanting in it to express all degrees and all results. It will keep step with the real course of development, will be found sufficient for every new phase of our people, for every occasion of life, and will keep up with every advance of our people in refinement. But it must avoid the affectation of cosmopolitan folly. No single language

has any thing to do with cosmopolitanism ; its soul is the characteristic life of that one people.

"Any one setting about a new enterprise is not so much inclined to ask, Has any one ever attempted this before, or begun or finished the like? The question is, Ought this thing to be done? And the same is true of one who makes words. If he has proper regard for the fundamental laws of language, he is not open to blame. No carping critic is entitled to ask, Did any one ever say that before? The question is, Ought this expression to be used? Can not a better one be found? For every living language advances, with an irresistible movement; and grammarians and dictionaries come along in its track behind, judging of it.

"The maker of technical words ought to be an interpreter of the spirit which permanently governs the whole language. For this reason he must look back to the primitive times of the language, and must follow in the true path of its course of development. If, in investigating these original sources, he discovers any early-forgotten word, he should bring this into public notice and use again. To reproduce an ancient word, apparently dead, is a real increase and strengthening of the language. No word should be considered dead, while the language is not dead; nor obsolete, as long as the language retains its youthful strength. Buried roots, which are still alive, and can throw out a vigorous growth of new stems, twigs, and leaves, bring blessing and prosperity. The shoots and sprouts of the old roots proclaim a new spring, after the long cold of winter. Thus the language will free itself from botching and patchwork, and will again become pure and strong. Without such protection of its original roots, the language will become overburdened, like a baggage-horse or beast of burthen, and must at last succumb under its heavy load of unsuitable additions. Every ancient word brought into use anew is an abundant fountain, which feeds the navigable rivers, digs deeper the mountain-valley, and indicates the coming of the floods. The word '*Turn*' may serve as an example. From this word have been formed, and are now in use, *turnen*, *mitturnen*, *vorturnen*, *einturnen*, *wettturnen*; *Turner*, *Mittturner*, *Vorturner*, *turnerisch*; *turnlustig*, *turnfertig*, *turnmüde*, *turnfaul*, *turnreif*, *turnstark*; *Turnkunst*, *Turnkunstler*, *turnkunstlerisch*; *Turnkunde*, *Turnlehre*, *Turngeschichte*, *Turnanstalt*; and many others."

This preface is followed by a valuable and clear description of the separate Turning exercises, and of the games practiced; and instructions on the establishment and organization of a Turning-ground.

After these come valuable general information and instruction on Turning institutions, teachers, &c. If the proverb is ever true, it is

true of Jahn, that the style is the man. Whoever would characterize him, must do it by giving matter from his works, in his own words. Accordingly, I give the following extracts from him :—

“The Turning system would re-establish the lost symmetry of human development; would connect a proper bodily training with mere exclusive intellectual cultivation; would supply the proper counteracting influence to the prevailing over-refinement; and would comprehend and influence the whole man, by means of a social mode of living for the young.

“As long as men here below have a body, and while a corporeal life is necessary to their earthly existence—which, if without strength and capacity, endurance and power of continued exertion, skill, and adaptability, becomes a mere inefficient shadow—so long must the Turning system be an important department of human education. It is incomprehensible how this art—so useful for health and life, a protection, a shield, and a preparation for war—should have been so long neglected. But these sins of an earlier rude and thoughtless time have now been more or less visited upon every man. And thus the Turning system is a subject of universal human interest, and is important every where, where mortal men live upon the earth. But still its special form and discipline must be peculiarly subject to the requirements of national and popular character. It must assume such a form as is given it by the time and the people; by the influences of climate, locality, country, and nation. It is intimately connected with people and fatherland; and must remain in the closest connection with them. Nor can it prosper except among an independent people; it is appropriate only to freemen. A slave's body is a constraint and a prison to a human soul.

“Every Turning institution is a place for exercising the bodily powers, a school of industry in manly activity, a place of chivalrous contest, an aid to education, a protection to the health, and a public benefit. It is constantly and interchangeably a place of teaching and of learning. In an unbroken circle, follow constantly after each other direction, exemplification, instruction, independent investigation, practice, emulation, and further instruction. Thus the Turners learn their occupation, not from hearsay, nor from following after some transient expression. They have lived in and with their work; have investigated it, proved it, demonstrated it, experienced it, and perfected it. It awakens all the dormant powers, and secures a self-confidence and readiness which are never found at a loss. The powers grow only slowly; the strength increases gradually; activity is gained by little and little; a difficult feat is often attempted in vain, until it is at last attained by harder labor, greater effort, and unwearied industry.

Thus the will is brought past the wrong path of obstinacy, to the habit of perseverance, in which is based all success. We carry a divine consciousness in the breast, when we realize that we can do whatever we choose, if we only *will*. To see what others have at last found possible, arouses the pleasant hope of also accomplishing the same. In the Turning association, boldness is at home. Where others are exercising in emulation with us, all exertion is easy, all labor is pleasure. Each at the same time strengthens the others by his labor, and confirms his own powers, and encourages and elevates himself. Thus the example of each becomes a model for the rest, and accomplishes more than a thousand lessons. No real deed was ever without result.

"The director of a Turning institution undertakes a high duty; and should approve himself thoroughly whether he is competent to so important an office. He must cherish and protect the simplicity of the young, that it may not be injured by untimely precocity. The youthful heart will be more open to him than to any one else. He will see, without concealment, the thoughts and feelings of the young, their wishes and tendencies, their impulses and passions, all the morning-dreams of youthful life. He stands nearest to the young; and therefore should be their guardian and counselor, their protection and support, and their adviser for future life. Future men are intrusted to his care; future pillars of the state, lights of the church, ornaments of the fatherland. He must be subservient to no temporary spirit of the age, nor to the condition of the great world, so often plunged in error. He who is not thoroughly penetrated with a childlike spirit, and national feelings, should never take charge of a Turning institution. It is a holy work and life.

"His reward will consist merely in the consciousness of having performed his duty. Old age comes more slowly upon us among the sports of the young. Even in the worst of times we can keep our faith, love, and hope when we see the fatherland renewing itself in the growth of the young. The teacher of Turning must abstain from pretenses; for every juggler can better deceive the outer world than he can.

"Good morals must be more implicitly the rule of action in the Turning-ground than even wise laws elsewhere. The highest penalty inflicted must always be exclusion from the Turning association.

"It can not be too often nor too deeply impressed upon the mind of every Turner, who lives such a life as he ought and who shows himself an able man, that no one is under heavier obligations than he to live a noble life, both in body and in mind. Least of all should he claim to be free from any requirement of virtue, because he is

strong of body. Virtuous and accomplished, pure and active, chaste and bold, truthful and warlike, should be his rules of action.* Bold, free, joyous, and pious is the realm of the Turner. The universal code of the moral law is his rule of conduct. To dishonor another would disgrace him. To become a model, an example, is what he should strive after. His chief lessons are these: To seek the utmost symmetry in development and cultivation; to be industrious; to learn thoroughly; to intermeddle with nothing unmanly; to permit himself to be enticed by no seductions of pleasure, dissipation, or amusement, such as are unsuitable for the young. And such admonitions and warnings should be given in such terms as to insure a school of virtue from becoming one of vice.

"But, again, it should not be concealed, that the highest and holiest duty of a German boy or German youth is to become and to remain a German man; that he may be able to labor efficiently for his people and his fatherland, and with credit to his ancestors, the rescuers of the world. Secret youthful sins will thus best be avoided by setting before the young, as the object of attainment, growth into good men. The waste of the powers and years of youth in enervating amusements, animal riot, burning lust, and beastly debauchery, will cease as soon as the young recognize the idea of the feelings of manly life. But all education is useless and idle, which leaves the pupil to disappear, like a will-o'-the-wisp, in the waste folly of a fancied cosmopolitanism, and does not confirm him in patriotic feeling. And thus, even in the worst period of the French domination, love of king and fatherland were preached to, and impressed upon, the youths of the Turning association. Any one who does any thing foolish or insulting to the German manners or language, in words or actions, either privately or publicly, should first be admonished, then warned, and, if he does not then cease his un-German actions, he should be driven away from the Turning-ground, in the sight of all men. No one ought to enter a Turning association who is knowingly a perverter of German nationality, and praises, loves, promotes, or defends foreign manners.

"With such principles did the Turning societies strengthen, train, arm, encourage, and man themselves for the fatherland, in the gloomy, sultry times of the devil. Nor did faith, love, or hope desert them for a moment. 'God deserts no German!' has always been their motto. In war, none of them staid at home, except those too young and too weak—and they were not idle. The Turning institution, in those three years, offered up costly sacrifices; they lie upon the battle-fields, from the gates of Berlin even to the hostile capital."

* These couples are alliterative in the original.—*Turner*.

It is difficult to select portions from Jahn's book for the purpose of describing him and his work, for all is characteristic; the book and author are cast in one mold.* Its work is, in the fullest sense of the words, what it purports to be—a German Turning system, in which a system of gymnastic exercises, complete within itself, is set forth with sound judgment, vivid style, and correct tact. It is not a wearisome, methodical, elementary joint-gymnastics for dolls; nor does it treat exclusively of bodily exercises, but discusses with great earnestness the moral atmosphere of the Turning organization.

The Turning system soon spread from Berlin throughout Northern Germany, and a large part of Southern Germany. Turning excursions had much influence in producing this result. Next to Berlin, Breslau had the largest number of Turners—some eight hundred. At that city, students, Catholic and Protestant seminary pupils, the pupils of four gymnasia, officers and professors, frequented the Turning-ground. At their head were Harnisch and Massmann; while Director Mönnich (of Hofwyl) and Wolfgang Menzel, then students, were among the assistant teachers. Singing flourished. On Wednesday and Saturday afternoons, after exercising from three to seven, the whole company returned singing to the city. The first half of the four hours, Turning exercises was there used in the drill, and the other half in the other exercises, especially games; an arrangement which is better than to begin with the more inspiring portion of the exercises, and to end with the more serious and laborious drill.

Jahn's judicious distinction between the Turning school and Turning exercises is one that might well be introduced in other subjects.

For instance, in teaching singing, the first half of the lesson might be occupied in singing the scale, &c., and the other half with singing songs, &c., which he had learned before.

We very often hear much said, at the present day, of the opposition between an artificial organization and a human development. On this subject the mistaken opinion often prevails that the intelligent, efficient human will is, as a matter of course, counteracted by the course of historical development. But this is not the case; the question is only, Whether that will was in harmony with the development and tendency of the people, or not. If not, it is true that its only result is a vain endeavor to effect something. This was the case, for instance, when Brutus endeavored to free Rome by the assassination of Cæsar. But what one of God's commissioned mes-

* Thus I have unwillingly left out Jahn's observations about national festivals, Turning schools, further exercises, costume, &c.

sengers can do, when in harmony with the age, is shown by Luther's Reformation.

It was one of the charges brought against the Turning system, that it was an affair artificially contrived, not a natural outgrowth. It is true that it grew quickly; fruits naturally ripen rapidly in hot weather. The period from 1810 to 1813, when Turning grew up, was certainly hot enough. Was the fire burning under the ashes all the time from 1806, which broke into a flame in 1813? Ever after the defeat of Jena, a deep grief was burning in the hearts of all German men and youth. The longing to free the beloved German fatherland, to renew its ancient glory, nourished among them a powerful mutual bond of the truest love. And the early Turners were among those included in this bond.

Their interested participation was nothing artificial, but merely the natural fruit of their earnest patriotism. This appears clearly enough from Jahn's account of the first beginning of the Turning system. It was this community of feeling and ideals which made the development of the art so rapid. There grew up, at the same time with it, a technical language, so appropriate that, instead of quickly going out of fashion, as artificial things do, it is at present, thirty-seven years after its appearance, entirely received and current.

Together with this first natural development of the Turning system, there came up also a reaction against many received and universal customs and manners. This necessarily aroused enemies, and the more because the Turners frequently overpassed the bounds of moderation, and made Turning identical with a warfare against all ancient errors. This was particularly the case after the war of freedom.

These errors did not escape the attention of the friends of the Turning system; and they endeavored to remedy them, whenever and however they could. This appears, for instance, from the following extract from an address to the students, delivered at the Wartburg festival, by a man whose liberal views are universally known; namely, Oken. He said: "Beware of the delusion that upon you depends the existence, and continuance, and honor of Germany. Germany depends only upon herself as a whole. Each class of men is only one member of the body called State, and contributes to its support only so much as its circumstances permit. You are yet young, and have no other duty than so to conduct yourselves that you may grow up aright; to train yourselves; not to injure yourselves by foolish practices; to apply yourselves, without permitting your attention to be diverted to any thing else, to this purpose which lies straight before you. The state is at present not concerned with

you; it has to do with you only in that you may hereafter become active members of it. You have no need of discussing what ought or ought not to happen in the state; it is only proper for you to consider how you shall yourselves in future act in it, and how you may worthily prepare yourselves to do so. In short, all that you do should be done only with reference to yourselves, to your life as students; and all else should be avoided, as foreign to your occupations and your life, in order that your setting out in life may not be ridiculous."

These words point out clearly the mistaken road by which the students afterward departed further and further from the right road. But they should not bear all the blame.

If a child has good and bad qualities, some people will look only at the former, and will foretell all manner of good of him; while others will see only the evil in him, and will prophesy an evil future for the child. But any one, who loves him truly, will consider how to cherish his good qualities, and to subdue his bad ones.

Such a child, with good qualities, but not without faults, was the Turning system. Passow, a man of honesty and benevolence, and of disinterested activity, looked almost altogether at its bright side, and in his "*Object of Turning*" (*Turnziel*) expressed hopes quite too great; it might almost be said that he spoke ill-luck to the child. Blame always follows excessive praise; praise must absolutely state the truth, must contain a just estimate of things.

My friend Steffens, on the other hand, saw only the dark side, the evils of the system; and he wrote his "*Caricatures*," (*Caricaturen*), and his "*Object of Turning*," (*Turnziel*), which was directed against Passow's "*Turnziel*." This talented man had lived all his life in the enthusiastic love of science and art; and this new system seemed to him to be cold and even inimical to every thing which he loved best. Jahn's rough, harsh, strong character was not agreeable to him; in the bitter censoriousness of many of the Turners, he naturally saw a hasty, presumptuous endeavor to improve the world; in their disrespect for many eminent men, unruly vulgarity; and in their German manners, only an affectation of them.

Thus there broke out in Breslau a violent contest between the friends and enemies of the Turners,* which called out many other

* This contest, in which I also took part, Steffens has described in his Memoirs. Steffens exercised a most profound and kindly influence upon my life; for which I shall forever be grateful to him. He was my instructor and my brother-in-law; and for eight years we lived as faithful colleagues together, in the same house at Breslau. And now suddenly we came into opposition to each other. Our lasting, and mutual, and heartfelt love was such that it can not be described how much we both suffered from this truly tragic relation. My friends at Breslau even advised me to leave the place. When Steffens visited me, eighteen years afterward, at Erlangen, we there quietly reviewed the evil days at Breslau. This, our last

publications besides Passow's and Steffens', only part of which would now have any historical interest. A work of permanent value on the subject is that of Captain von Schmeling, on Turning and the Landwehr; in which he showed how Turning was a valuable preparatory school for the training of the militia men.* Harnisch wrote "*Turning in its Universal Relations*," (*Das Turnen in Seinen Allseitigen Verhältnissen*.)

In a dialogue entitled "*Turning and the State*,"† I defended Jahn and the Turning system from the charge of being Jacobinical, and of hate toward France; and, in some others, against those who charged it with being anti-Christian. But this controversy was warmly carried on in other places besides Silesia. Arndt wrote powerfully in favor of Turning.‡ The physician Könen, in Berlin, wrote upon its medical importance; § not to mention many other publications.

During this controversy, the Prussian government showed great and deep interest in the Turning system. A plan had even been prepared for the establishment of Turning-grounds throughout the whole kingdom. But on the very day when this was to have been laid before the king for his approval the news of Sand's murder of Kotzebue reached Berlin, and the approval was withheld. This was the first fruit of that unhappy deed.

Many years passed before Turning was again freely practiced in Prussia. In Wurtemberg alone|| it has been uninterruptedly maintained down to the present day. In Bavaria the present monarch, as soon as he came to the throne, took the system under his protection, and employed Massmann to have a Turning institution erected at Munich.

IV. TRAINING OF THE SENSES.

Rousseau, in "*Emile*," discussed the education of the senses.¶

earthly meeting, seemed to me to join immediately on to the early youthful intercourse of thirty-three years before; and I felt myself drawn to him by a love which had lasted through good and evil times, and which will outlive death, because it is stronger than death.

* At a later period, in 1843, Dr. Münnich wrote "*Turning and Military Service*," (*Das Turnen und der Kriegsdienst*), in which he clearly stated the important relation between the two. W. Menzel, in his treatise, "*Bodily Training from the Point of View of National Economy*," (*Die Körperübung aus dem Gesichtspunkt der Nationalökonomie*), has earnestly recommended Turning, as a means of educating defenders of the fatherland.

† See my "*Miscellaneous Writings*," (*Vermischte Schriften*.) First printed in the Silesian "*Provincial Gazette*," (*Provinzialblätter*.)

‡ "*Spirit of the Age*," (*Geist der Zeit*.) vol. 4, 1818. Reprinted with the title "*Turning; with an Appendix*," (*Das Turnwesen nebst einem Anhang*.) By E. M. Arndt. Leipzig, 1842. A most valuable work.

§ "*Life and Turning, Turning and Life*," (*Leben und Turnen, Turnen und Leben*) By von Könen. Berlin, 1817.

|| A man of noble character and full of love for Germany and the German youth, Professor Klumpp, established the Stuttgart Turning Institution, and conducted it for many years. In 1842 he wrote his valuable treatise, "*Turning; a Movement for German National Development*," (*Das Turnen; ein Deutsch-Nationales Entwicklungs-Moment*.)

¶ I have gone more into detail on this point in my chapter on *Emile*, which see.

According to him, all the senses should be cultivated; the eye, in estimating magnitudes and distances, and in drawing geometrical figures; the touch, in judging by means of feeling, which the blind learn to do remarkably; &c.

In this department of gymnastics, Guts Muths substantially followed Rousseau. He assigned to the senses a remarkable office; namely, to "awaken, from the slumber of non-existence, the child, at first asleep in its quiet bosom." The emptiness and impossibility of Locke's opinion, that man is at first a mere sheet of white paper, is made very clear and evident by Guts Muths' expression.

"The soul of the young citizen of the world," says Guts Muths, in another place, "yet lies in the profound slumber which comes with it out of its condition of non-existence." The mind becomes at first susceptible of powerful impressions on the feelings; and then becomes more and more awakened, and capable of more and more delicate impressions. "But, as the gradations of impressions on the senses, from the most violent to the most delicate of which we can conceive, are immeasurable, so is the refinement of our susceptibility to such impressions also possible to an immeasurable degree." All the life long, the mind is becoming constantly susceptible to fainter and fainter impressions; that is, more awake."

Guts Muths' idea of training the senses is thus the sharpening of them; as also appears from the examples of it which he gives. The boys are made to shut their eyes and feel of letters, figures, the devices on coins, &c. Seeing must be trained by cultivating the vision of small things and distant things. The children are "to follow Nature even to her minutest objects, even those scarcely visible to the eye." "The pupil," he says, "should observe not only the coarser parts of flowers, but his eye should pierce even their minutest portions. He should study the absorbent vessels, the structure of the skin, the bark and leaves of trees, many kinds of seeds; the reproductive organs of plants, the pollen, anthers, &c." He should be able to recognize a flower or a stone at thirty paces, and a tree at from a hundred to a thousand paces. His ear should be trained not only by music, but "he should observe the sound of laden and empty vehicles, of the squeaking of doors," &c. If the keenness of the senses, their susceptibility, were the measure of their improvement, those who are disordered in their nerves would surpass the most practiced senses of the healthy. They are annoyed by the least and most distant noise; and distinguish its exact nature only too well. If the pupils of Guts Muths could distinguish by the touch, with their eyes closed, between gold and silver coins, this was far outdone by a sick person, who

became uneasy when any one, even without his knowledge, brought a silver spoon near him.

The American Indians, as is well known, whose mode of life is little better than that of animals, surpass most Europeans in the keenness of their senses; and thus, according to Rousseau and Guts Mutha, the Caribs and Iroquois should be valued as our models. They might equally as well have proposed the eyes of a lynx, the nose of a hound, &c., as ideals. I have expressed my views already upon such doctrines as to bodily training, particularly that of the senses, in the following aphorisms, in which I have described an ideal of the cultivation of the senses.

The ancient legends clearly expressed the difference between mere animal strength of body and the human intellectual strength of body, by making their giants—huge, stupid, uncouth masses of flesh—be conquered by knights, smaller in body, but of keener intellects. Are then tigers models for springing, apes for climbing, and birds for flying? are they inaccessible ideals, to which the gymnast should look up with resignation and longing? We might like very well to fly, but not in the form of a crow or a stork; we would be angels. We would prefer to live imperfect, in a higher grade of existence, with the sense of capacity for development, than to fall back into a more complete but lower grade, behind us and below us. Cæsar despised being the first man in a small village, because he felt himself capable of being the first man in Rome. In like manner, the Turning system contains a lower animal development, because a higher human one is accessible to it.

If the eye were only a corporeal mirror of the visible world, it would represent equally well or equally ill the most different things, according to the bodily health and strength, or sickness and weakness, of its condition. But it is an organ of intellectual susceptibility; of not only a bodily but also an intellectual union with things. And accordingly it is a well-grounded usage in language by which we say "to have keen eyes;" and "to have an eye for" particular things, such as plants, animals, &c. The former indicates bodily health and strength; the latter points to an original spiritual relation between the eye and certain things, trained by close study.

The same is more or less true of the other senses. The art of cultivating the senses has only to a very small extent any thing to do with what increases their corporeal strength—as, for instance, with medical rules for taking care of and strengthening the eyes.

It has much more to do with the cultivation of the intellectual susceptibility of each of the senses. Therefore it begins not with

the arbitrary, one-sided cultivation of one sense, which tends to diminish the susceptibility of the others; and still less does it direct one sense arbitrarily to one single class of objects, as the eyes to plants or animals exclusively. For this would cripple the intellectual application of the senses to things of other kinds. But if the teacher has begun, as the universal microcosmic character of every well-organized child requires, with as general a cultivation of all his senses as is possible, and then observes a prominent and stronger activity in one sense, or an especial applicability of it to some one department of the visible world, as of the eye to minerals, &c., then only may he undertake the cultivation of that one sense or susceptibility, as a peculiar talent.

If now the intellectual senses are supplied by the external senses with an abundance of intuitions of all kinds, the impressions thus received gradually ripen, and desire to be brought to the light of day. Thus a little child speaks words which it has often heard its mother use, then sings what it has often heard sung, and tries to draw what it has often seen.

With every receptive organ nature has coupled a producing or representing one, or even more; in order that man may not be solitary in the midst of his inward wealth, but may communicate with others. He can, in many ways, represent a known object, whose picture is visible to his mind; he can describe it in writing, act it, &c.

The development of the susceptibility to impressions must naturally precede that of the power of representing. Hearing must precede speaking and singing; seeing, painting, &c. There exists a sympathy, as is well known, between the susceptible organs and the corresponding representing ones; of the organs of hearing with those of speech, of those of vision with the hand, &c. The use of the receiving organs seems to produce a secret, quiet growth of the representing ones, though these latter be not directly practiced.

In many trades, the apprentice is made to look on for a whole year, before putting his hand to the work. When his eye thus becomes intelligent, the hand follows it sympathetically. It is to be wished that the example might be followed in all the cultivation of the senses.

The teacher who tries to cultivate receptivity and power of representing together, who requires the pupil to furnish an expression immediately after the impression is made, mistakes Nature, who requires a quiet, undisturbed condition of the senses for their receptive office, and usually a slow development of the power of representing.

It is said of some of the North American Indians that the development of their senses furnishes, for those who would combine them

with bodily exercises, a model which never can be equaled. It is true that, according to the accounts of travelers, they surpass Europeans in keenness of sight, hearing, and smell. But are they therefore models of the cultivation of the senses?

This is confusing the idea of a human cultivation of the senses with an animal one; corporeal perfection of the senses with intellectual. The preceding observations have shown how different these are; examples will make the difference still more evident.

There are many men who have hearing so keen as to distinguish faint sounds at a very great distance, but who have no feeling at all for pure or beautiful music. There are most accurate piano-tuners and music-masters, who can distinguish every fault in any instrument amongst a full orchestra; but who, notwithstanding this fineness of ear, are so destitute of an intellectual ear for music as to prefer the most vulgar sort of it.

There are, again, others who can not tune any instrument accurately, and still less guide an orchestra; who are inspired by good music, and show distinct dislike to bad. Contrast with these keen and delicate hearers, Beethoven, who was almost deaf; and, again, there was another great harmonist, who said that perusing the score of a composition gave him more pleasure than the execution of the music, because the latter never equaled his ideal. He was thus capable of intellectual musical pleasure, even had he been completely deaf.

The case is similar with the eyes. Among my mineralogical pupils, I found some with very healthy bodily organs, who could perceive the smallest objects, and still were incapable of comprehending forms, of distinguishing like from unlike; in short, they had eyes, but did not see. On the other hand, there were others, whose eyes were weak, and who were as it were blind to small crystals, but who felt all the beauty of the larger ones, and closely followed all their varieties of color. So, I have known exceedingly short-sighted young men, who still had the greatest taste for pictures. And, again, there are many very keen-sighted persons, who gaze without emotion on the most magnificent pictures, sculptures, and churches.

The great distinction between the bodily and the intellectual senses might be illustrated by many other examples.

Surely these animal sharp eyes and ears of the Indian are not our models. It is the spiritually-illuminated eyes of a Raphael, a van Eyck, an Erwin von Stein, the divinely-consecrated ears of Handel and Leo, which are the noblest specimens of the cultivation of the human senses, which are the divine models for men.

Regard was had in the schools to the cultivation of the senses quite a long time ago; or at least so it would appear. So-called "Intuitional Exercises" were introduced; Pestalozzi giving them an impulse, especially in his "*Book for Mothers*." "The child," says Pestalozzi, "and indeed man universally, must be first made acquainted with what lies next him, before he can attend to the acquiring a knowledge of what is further off. The nearest visible object to the child is his own body, and this he should first of all observe, under the direction of the mother. She must, with him, follow the '*Book for Mothers*,' step by step, going through every division and subdivision of it, step by step, to the furthest details."

Thus, for instance, we find in that work:

"The first joint of the middle toe of the right foot. The middle joint of the middle toe of the right foot. The last joint of the middle toe of the right foot. The first joint of the middle toe of the left foot. The second joint of the middle toe of the left foot. The last joint of the middle toe of the left foot."

"My body has two limbs above and two below."

"My two upper limbs have two shoulders, two shoulder-joints, two upper-arms, two elbows, two elbow-joints, two fore-arms, two wrists, and two hands."

"Each of my two upper limbs has one shoulder, one shoulder-joint, one upper-arm, one elbow, one elbow-joint, one fore-arm, one wrist, and one hand."

"My two hands have two wrists, two palms, two thumbs, two fore-fingers, two middle fingers, two ring-fingers, and two little-fingers."

"Each of my two hands has one wrist, one palm, one thumb, one fore-finger, one middle-finger, one ring-finger, and one little-finger."

"My two palms have two balls of the thumbs; each of my two palms has one ball of the thumb."

"My two great toes have four joints, two front and two back; four knuckles, two front and two back; and four joint-lengths, two front and two back."

"Each of my two great toes has two joints, one front and one back; two knuckles, one front and one back; and two joint-lengths, one front and one back."

"The ten fingers of my two hands have twenty-eight joints, ten first, eight middle, and ten last; twenty-eight joint-lengths, ten first, eight middle, and ten last; and twenty-eight knuckles, ten first, eight middle, and two last."

"The five fingers of one hand," &c., &c.

It is evident how infinitely wearisome and unnatural such a mode of observing and naming over all the parts of the body must be, both

to young and old. And it is an error to take his own body as the first object which comes under the notice of the child. Without some natural or artificial mirror, man would not see his face, and some other portion of his body, all his life long. A child is much more attracted by objects which stimulate his senses by color, brightness, smell, or taste. He would very much prefer cherries or apples to "the middle joint of the little toe of the right foot."

Several detected Pestalozzi's error. But, taking his principle as true, that it is necessary to begin with what is nearest at hand, they took subjects from the school-room; and the doors, windows, walls, seats, and desks were observed, described, and named, down to their smallest parts. I give an example.*

"The school-room and what it contains.

a. Enumeration of objects contained in and about the school-room.

1. Without detailed definition.

2. With detailed definition; as, immovable, movable, simple, compound, how compound? within reach; necessary; accidentally pertaining to the room.

b. Use of articles in and about the room.

c. Description of individual things, by their color, their form, their parts, the connection of their parts.

d. Materials of which the separate things and their parts are made."

The description of the windows alone fills two closely-printed pages.

It says, among other things:

"The teacher should now have each of the separate parts of the window given in their order; as, the panes, the sash, the putty, the pulley, the button, the catch, the sash-bolt; lastly, the whole window, the window-frame, the molding. * * * Thus the whole window has been analyzed, and its parts considered. It only now remains to reconstruct it."

It would be much better, instead of all this wearisome, pedantic enumeration and hyper-pedantic reconstruction, to say, "The windows in the school-room are long and four-sided."

That such a methodical and wearisome method of instruction would throw active children either into despair or sleep, is clear. They had better jump about over the desks and seats in sport, than to describe them in this insufferably-affected way; they had better analyze perhaps not a whole window, but now and then a pane, in their play, and let the glazier "reconstruct" it, than to analyze and construct it in words.

It is a pity that something can not be found to use as a subject of instruction in the school besides what the boys naturally learn in

* From Denzel's "System of Education," (*Erziehungslehre*.) 3, 32.

their own experience. They know the windows, and seats, and desks, without any teaching; and will never call a desk a seat, or the contrary. For what purpose should he consider separately, and name, all the parts of the window; the pulley, the latch, the sash-bolt? What interest have they in these? Such details and names may be left to the glazier, the carpenter, and the locksmith. Every trade is a little separate people, with a peculiar language; but all these separate people understand each other, not in their trade-language, but in the language of their country. The trade-language belongs to the peculiar employment of each trade; each one has to do with many things which have no concern with the others, and can not concern them, unless they neglect their own business. And fellow-tradesmen discuss the matters of their trade, in their peculiar trade-language.

Justus Möser, who had an eminently sound understanding, says,* "My miller played me yesterday a comical trick. He came to my window and said that 'there must be four iron nuts on the standards and standard-pieces, opposite the crank; and all the frames, boxes, bolting-cloths, and springs wanted fixing; one of the iron post-belts will not work any longer with the shifting-piece, and ——.' He spoke German, my friend, and I understood well enough that he was talking about a windmill; but I am no windmill-builder, to understand the thousand details of a mill, and their names. But at that point the knave began to laugh, and said, with a queer gesture, that the pastor did the same thing on Sundays; that he spoke nothing but learned words, that took the very hearing and seeing away from the poor people; and that he would do better, he thought, to do as he (the miller) did, and furnish good meal to the parish, and keep his terms of art for architects."

The application to this sort of "intuitional instruction" is clear; and is doubly forcible because the teachers are not architects, and only affect a knowledge of these technical matters.

A remark of Herr Roth is very true, and very applicable to the present object. He says, "There are many things which, when rapidly discussed, on a proper occasion, are interesting to children; when, if studied by the hour, and methodically taught and reviewed, they would be most wearisome to them. To ask, cursorily, What is the difference between this table and that one? is very well; but to be staring at tables and desks, year in and year out, and describing them, is quite another thing."

The word "stare" is precisely appropriate; the exercise is a lifeless and forced one. The window and its parts are reflected in the staring eyes of the stupefied and wearied child; and his lifeless

* "*Patriotic Fancies*," (*Patriotische Phantasieen*), 3, 943.

repetition of what the teacher says over to him corresponds with the lifeless reflection in his eyes.

Close consideration will show that this sort of instruction is much more an exercise in language than of the senses, although one of the most unintellectual kind. The intuition in the case is only to give the teacher an opportunity to talk; and accordingly it makes little difference what the object exhibited is, whether a picture by Raphael or a tavern-sign, the Strasburg cathedral or a wretched stable. Words can be made about any thing and every thing. The inquiry is scarcely made, Whether any knowledge is gained by the intuition; and not at all, Whether a permanent remembrance is insured of the thing shown. Very few seem to have an idea how quiet, undisturbed, and often-repeated the bodily intuition must be, in order to the obtaining of such a recollection, for the mental assimilation of the thing shown; and how the pupil's words should be only the product of this assimilation. No one seems to consider this process of real generation of words. A piece of gypsum is shown to a boy; he is made to repeat three times, "That is gypsum;" and then the specimen is put aside, and it is fancied that the boy has an actual knowledge of gypsum.

It will now be asked, Should intuitional exercises be quite omitted in school? I reply, Such wooden, methodical exercises on desks and seats may be omitted, as may all drilling merely for the sake of the drill; and, further, so may all drilling that is to give practice in nothing except the mere use of words.* The hunter, the painter, the stone-cutter, &c., do not train their eyes, nor does the musician his ear, for the sake of training it. Children, properly instructed in natural knowledge and in drawing, will be sure to use their eyes; and, as they penetrate further and further into their subject, they will, in the most natural manner, arrive at an increased accuracy of expression for the objects which they perceive by their senses.

* Children are frequently found, especially in the common schools, who are as if dumb. How shall they be made to speak? I would recommend that they should be spoken to, not in a stiff school-fashion and school-tone, which would make them stupider than ever, but, as far as possible, in an entirely usual manner and tone, and on some common subject, which they understand, and on which questions may be put to them. Tables and desks may be used for this purpose, but not methodically analyzed.

XI. PROGRESS OF EDUCATIONAL DEVELOPMENT.

[Translated from Raumer's "*History of Pedagogy*," for the American Journal of Education.]

I. PEDAGOGY.

HISTORY has made us acquainted with the very different eminent educators of the last century. We have seen that each of them had an ideal which he sought to attain; a more or less clear conception of a normal man, who was to be produced from each child, by his method of education.

Bacon defined art, "Man, added to things." A man, that is, who prints upon things the impress of his mind. Does the art of education come under this definition? Certainly not; for we should have to consider the children to be educated as mere material, upon which the educator is to impress his ideal, as the stone-cutter does on a block of marble. But we might define the art of education, very generally, in analogy to Bacon's definition, thus: "Man added to man."

In order to a correct understanding of this last definition, we must see clearly how it is related to the various ideals or normal men of the educators. Did not each of them, either consciously or unconsciously, seek to determine an ideal of the human race; a generic ideal, including all individuals; and would he not educate every child according to his generic character and ideal?

God is the educator of the human race. Man is created by him, and for him; the beginning, progress, and perfection of humanity are his work. And if the teacher would have his work endure, he must look to God's system of "education of the human race." But it will not suffice for the educator to look to the generic character and the destiny of humanity only; he must regard another point. Every child is born with bodily and mental peculiarities, which sharply distinguish it from all other children, although they all have the generic character. No two children were ever entirely alike; each one is an entirely peculiar, personified organism of natural endowments; a completely individual and personified vocation. An invisible and mysterious master forms each of them according to a separate ideal: a master who does not, as human artists do, first fashion his work and then neglect it, as something entirely separate from himself; but who continues to work within man, even until his death, to the end that he may become like his prototype, and may fulfill his vocation.

God cares for each individual with the same paternal love as for the whole human race.

The vocation of the educator is to become a conscientious and obedient fellow-laborer with the divine Master; to endeavor to know and to help forward the perfection of that ideal for whose realization the master has already planted the seed, the *potentia*, in the child. I repeat: The educator must look to His work, if his own work is to stand; that is, not to the scarcely-comprehensible work of God upon the whole human race, but to his work within every individual child to be educated.

God formed man after his own image; but, after the fall, it is said that Adam "begat a son in his own likeness, after his image;" not after the divine; flesh born of flesh, a human child, perverted from God. During all the thousands of years which have passed since Adam, only one child has lived who was sprung immediately from on high, and who, of his own power, grew in knowledge, in stature, and in favor with God and man; and who needed no education, but only care. All other men are invariably sinners from their youth up; and in all the image of God is removed away.

The purpose of all education is, a restoration of the image of God, with which the new birth begins. "This is the work of the regenerating, creating power of God, (ἐκ θεοῦ γυνήσκοντα;) and, although a mystery both in its origin and in its aims, (John iii., 8,) works upon the earth in a visible and unmistakable manner—a new creation, a new man.* The mystery of its origin is the mystery of the sacrament of baptism, "the bath of regeneration." After that period there are two powers within the child, who commence the strife between the spirit and the flesh, the old and the new man; a strife of regeneration, which endures even to the end of life.† Parents and teachers are the auxiliaries of the child in this contest. The problem of Christian pedagogy is, lovingly and wisely to watch, pray, and labor, that in the child the new man shall grow and be strengthened, and that the old man shall die.

Thus it is that we understand the term "man added to man."

But the church theory of baptism has been attacked; and, in our own times, anabaptist views have become widely disseminated. Many see, in baptism, only a symbolical act, by which the baptized

* Harless, "Ethics," 77.

† Larger Catechism. "The power and work of baptism are: the mortification of the old Adam, and afterward the resurrection of the new man. Which two are in progress throughout all the life; inasmuch that the Christian life is nothing else than a daily baptism, begun once, but always in progress."

And J. Gerhard says, "Infants, in baptism, receive the first fruits of the spirit and the faith."

is preliminarily received among the members of the Christian church, without becoming one truly and actively, because he is yet inexperienced in faith. It is by confirmation that he becomes consciously an acting member of the church. To admit a grace of baptism, it is said, is to admit a magical operation of the sacraments.

On this subject I refer to the dogmatic theologians, especially to Luther; and shall here only observe as follows.

The difference respecting baptismal grace seems to proceed chiefly from the opinion that, if grace passes from God to man, the latter can not be entirely passive; but that God can not confer a spiritual gift, unless the recipient shall receive it with intelligent consciousness.

Let us turn for a moment from spiritual to natural endowments. Is it not a proverb that "Poets are born?" Must it not be confessed that, in the new-born infant Shakspeare, the *potentia*, the seed, of the greatest creative talents the world ever saw was slumbering, quiet and unobserved, just as there was once slumbering, in a small acorn, the *potentia* of the mighty oak of a thousand years, which now stands before us? And might we not reply to the masters in Israel, who doubt the existence of this *potentia*, "Ye do err, not knowing the power of God?" For to whom belongs the glory? Was the poet the intentional production of his parents? And could not God, who in so profoundly-mysterious and incomprehensible a manner blessed their union, confer an equally wonderful power upon the sacrament which he ordained?*

Although I refer to dogmatic writers for the details of this theory, yet I may here observe that it is of the utmost importance to theologians. If Christian parents believe in the actual beginning of a new and sanctified life in their child, if they see in him a child of God, in whom the Holy Ghost works, they will educate him as a sanctified child of God, will teach him early to pray, and will make him acquainted with God's Word. But if they do not believe that the seed of a new life is in the child, if they consider him a "natural man, who receives nothing from the spirit of God," and as incapable of faith, they will proceed according to whether they are Christians or not. If not, they will bring up their child as a natural child of Rousseau's kind; a heathen child, in a heathen manner. But if they are, as is the case with baptists and anabaptists, they will still see in the child a heathen, but one who can early be brought to Christianity, by the Word, and by awakening addresses. In this manner they think of themselves to bring about the new birth, instead of considering,

* The unworthy manner in which the sacrament is often administered causes many to err. But if the king should send us a magnificent present by a foolish servant, incompetent to estimate it, would that diminish the value of the present?

as do the believers in the church's theory, that the care of the seed of a new life, planted in the child by baptism, is the office of education.

II. PELAGIAN PEDAGOGY.

I have mentioned Rousseau. We have learned to consider him the true representative of that system of pedagogy which I shall, for brevity, call Pelagian—or even hyper-Pelagian. "Every thing is good," begins "*Emile*," "as it comes from the hands of the Creator; every thing degenerates, in the hands of men." These words he uses, not of Adam before the fall, but of every new-born son of Adam, born of sinful seed. And he says, in another place, "The fundamental principle of all morals, upon which I have proceeded in all my writings, and have developed in *Emile* as clearly as I could, is, that man is by nature good, a lover of justice and order; that no inborn perverseness exists in the human heart, and that the first impulses of nature are always right."

Thus he distinctly denies original sin, and would disprove the words, "That which is born of the flesh is flesh; flesh and blood can not inherit the kingdom of heaven." While the Christian teacher seeks for reformation, for the destruction of the old man, and the quickening and growth of the new, Rousseau recognizes only one, the old man, whom he himself calls the "natural man." Him he would develop and watch over; and would dress him out for baptism with borrowed Christian adornments, although he ignores Christianity, and congratulates himself on the fact that his child of nature belongs to no religion and no church.

We have seen to what absurd conclusions Rousseau was pushed by this unchristian premise; to what unnatural views, by his constant reference to nature; to what sophistries, by his attempt to show that all wickedness is first implanted in the child, originally as pure as an angel, by adult persons. Luther's sound and healthy pedagogy is precisely the opposite of Rousseau's. The comparison of the two must convince any one that the division of educators into Pelagian and anti-Pelagian is a fundamental one, and of the greatest practical importance.

III. RE-ESTABLISHMENT OF THE IMAGE OF GOD. HUMAN TRAINING.

Christ said, "Be ye perfect, even as your Father in heaven is perfect." Thus he places before us the very highest ideal; and reminds us of that lost paradise where man retained the uninjured image of his prototype. And thus we take courage to "press toward the mark for the prize of the high calling of God in Christ Jesus."

Christian training seeks the re-establishment of the image of God,

by raising up and faithfully guarding the new man, and by the death of the old. The process of the re-establishment is one both of building up and of destroying; positive and negative; and this in relation to

- a. Holiness and love.
- b. Wisdom.
- c. Power and creative energy.

IV. EVIL TRAINING.

While a right training, such as is pleasing to God, seeks such a re-establishment of the image of God in man, that the new and heavenly man shall become a power within him, and the old man shall die, there is still, on the other hand, a false and devilish training,* a miseducation, a caricature of education, which is not satisfied with our inborn sins, but which also proceeds to destroy the young by naturalizing bad instincts in them, or even by a methodical course of corruption. The ideal objects of this miseducation are to destroy the seed of grace in the new man, in the child, and, on the other hand, to encourage and protect the old man, the man of sin, until he shall rule, alone and uncontrolled.

Fearful evils grow out of such a state of things. All manner of warnings away from this destructive path should be given; and to this end we should give diligent attention to discipline in the Lord, to delay, to education, and to miseducation.

V. (a.) RE-ESTABLISHMENT OF HOLINESS AND LOVE. CHRISTIAN ETHICAL TRAINING.

Man fell, from pride; because he would be not merely like his Maker, but equal to him, instead of obeying him in childlike love. In the place of love of God, there thenceforth prevailed in him a delusive self-conceit and self-love; and, in order that he might not thus go entirely to ruin, God reserved for himself a place in him, by a conscience, powerfully corroborated by the death of the wicked. This was man's dowry, when he was driven out of Paradise; his protecting angel, powerful against his original sinfulness, who ever, against his own will, kept him humble in the fear of God, which is the beginning of wisdom; and was his inward taskmaster, to drive him to Christ. Afterward, the law was put over him, as a severer taskmaster; to awaken his sleeping conscience, and to direct him when going astray.†

In the fullness of time appeared Christ, to reconcile fallen man to

* "We are justly given over to that ancient wicked one, the master of death, because he has persuaded our will into the similitude of his will, which is not established in thy truth."—Augustine's *Confessions*, vii., 21.

† Romans, ii., 14—17.

God, and to re-establish the kingdom of childlike obedience and love.

The explanation of each of the ten commandments, in the smaller Lutheran catechism, begins with the words, "We must fear and love God." This is to awaken the conscience of the child, and to impress upon him the fear of God; but love is joined with fear. In these two words are contained the law and the gospel, the Old and New Testament presentations of the commandments. Conscience and the law continually remind sinful man of God's holiness and justice, and drive him to repentance. But the most anguished conscience will find peace in looking to the forgiving love of Christ; in faith in him who beareth the sins of the world.

The Holy Scriptures repeatedly point us to the holiness, justice, and love of God as our model. "Be ye holy, saith the Lord, as I am holy." "Be merciful, as your Father in heaven is merciful." "Beloved, if God so loved us, we ought also to love one another." But Christ includes all in the words "Be ye perfect, even as your Father in heaven is perfect."

Thus, we repeat, He admonishes men to return to God; to re-establish their original likeness to him; and He, who is "the brightness of his Father's glory, and the express image of his person," the beginner of our faith, as he will be the finisher of it, will not neglect the work of his hands. The hour of his death was the hour of the birth of a new world, victorious over sin and death, loving and well-pleasing to God. After His return to his Father, he sent us the Holy Ghost, to complete the work which he had begun in the hearts of men, and to extend the kingdom of God over the whole earth. He, the educator of the human race, is the master of all teachers; he must guide them in all truth, must bless their labors, and teach them to pray. Only under his guidance can a Christian ethical training prosper, the image of God be renewed in the child, holiness and love planted in his heart, and wickedness and unlovingness rooted out.

VI. ANTI-CHRISTIAN AND IMMORAL MISEDUCATION.

But who can enumerate the manifold offences of parents and teachers, against the rules of a Christian ethical training?

The conscience of children is laid asleep instead of being awakened, and sins are treated as pardonable weaknesses.

In the place of a godly conscience is even planted a lying spirit; a devil's voice is placed in the hearts of the children. Thus, there is held up before them, as the highest object of attainment, not acceptance with God, but the false and deceiving glitter of honor among men; notwithstanding the warning voice of the Lord, "How can ye

believe, which receive honor one of another, and seek not the honor which cometh from God only?" How often must we hear it said, What will people say? Foolish parents refer their children to "people" as the highest tribunal; to the customs of the multitude who are walking on the broad road which leadeth to destruction; instead of early impressing upon them the bold expression of the apostle, "For what have I to do to judge them also that are without?"

A similar practice is that of teaching children to put on a hypocritical behavior before people, to assume rootless and lifeless pharisaic virtues, such as will pass current with those who do not look for any ethical basis of action, and with whom the show will pass for the substance.

If we follow the life of the fleshly minded, back to their youth, we shall very often discover many serious faults in their parents. The first seeds of the dominion of the flesh in them were often planted either by the unjustifiable neglect of their parents or by actual positive misleading. Who can describe the influence upon a child's soul of vile loose dances, of vulgar plays, of reading bad romances? How often have cards and lotto during childhood originated the subsequent fury for gaming; and how often have deluded parents taught these dangerous games to their children!

Many things might be said of the bad examples set before children by the thoughtless and even wicked remarks which they hear grown persons make.* But enough has been said to explain the meaning of the term "anti-Christian, immoral miseducation."

VII. RE-ESTABLISHMENT OF WISDOM. INTELLECTUAL TRAINING. WRONG WAYS.

With sin is closely allied error; deviation from true ways. Adam's naming of the beasts in Paradise indicates the profound and godlike power of mental penetration which he possessed before the fall. For it is said that, as the man named them, "that was the name thereof." This divine approbation of Adam's nomenclature showed that the names were competent to express the natures of the various animals; and would certainly not have been bestowed upon the names which modern science has arbitrarily invented and bestowed on them.

But the restoration of this primitive innocent wisdom is an object to be sought after. It is the object of all intellectual training; and is intended to destroy error, and lead to the real truth; just as it is the office of Christian ethical training to destroy sin, and to lead to virtue by faith.

As conscience may be considered a correlative of original sin, so

* "The utmost reverence is due to the young; if you are meditating any thing vile, disregard not their tender age." How many Christians does Juvenal put to shame!

the reason may be considered a correlative of original error; as an intellectual conscience; an organ of intellectual self-knowledge.

Defenders of Christianity have said much against the reason; and quite as much might be said against the conscience. We have seen that in men, instead of the true conscience, the voice of God, there may enter a false conscience, the voice of the devil, betraying into all evil. In like manner the reason may become false, especially through pride. When not thus distorted, it represents God's truth in man, as the conscience does God's holiness and justice.

"The reason," says Hamann, "is holy, right, and good; but it can produce nothing except a conviction of the universality of sinful ignorance." Thus, the right reason will make us humble; and points sinful, ignorant man to a holy and all-wise God. Through an unholy, wrong, and wicked reason, on the contrary, comes, on one hand, the boundless presumptuousness of pretending to know absolutely, to recognize truth as God does; or, on the other hand, a doubt of all recognition of truth, a proud and cold acataleptic condition. The good and holy reason of a Christian applies itself, under the Holy Ghost, to that learning which guides into all truth. In this school—the school of humility—it learns to know its intellectual limits; and the boundaries between the regions of faith and of sight. It recognizes the fact that, since the fall, man has been in the "region of dissimilitude," and distinguishes between that which is given him to know and that which is the subject of faith; those incomprehensible mysteries whose essence God alone understands, because he is that essence.

Absolute truth, as it is in God, is just as inaccessible to man, as long as he is imprisoned within his earthly tabernacle, as is absolute holiness. He who asserts that he possesses the absolute truth must also mean that he is absolutely and completely holy; and armed with divine power.* "Knowledge, and power, and holiness are identical."

A strife for wisdom, analogous with the strife for holiness, lasts every man his lifetime, in the pursuit after truth.

There is also an intellectual miseducation, analogous to the ethical one, in men perverted and turned away from God. Puffed up with a conceit of wisdom, they are deceived as to the limits of it. They also mistake the giver of all knowledge; do not ask him for wisdom; do not thank him for the intellect which he has given them; for they think all knowledge the fruit of the powers of their own minds. But their labor, which is not performed in God, which seeks not the

* Not that every truth is merely apparent, and is uncertain; but that every truth contains something entirely comprehensible, and at the same time something entirely incomprehensible. This is true even of the profoundest essence of mathematical truth—of its ultimate base. See the chapter entitled "*Mysteriously Revealed*."

glory of God, but of themselves, is a servile labor, without a blessing and without peace. This is unfortunately the character of the usual scientific labors of the present day; and this perverted belief in so many learned men has a most powerful and most evil influence on the instruction of the young. Vanity impels the learned men; they impel the young by vanity, and lead them to make a show before people with what they have learned. Thus it happens that all pleasure in what they learn, and the mode of learning it, is entirely driven away, and replaced by an idle pleasure in the praise of men; and all which is cursed by such vanity must of necessity wither away. While both old and young, teachers and scholars, are, like Narcissus, foolishly burying themselves in a vain self-admiration and self-respect, still others fall into the same snare, by devoting to ungodly scientific labors their whole lives, words, and actions. Students of nature, wholly absorbed in the creature, ask not after the Creator; but live in a modern heathenism; and philologists, neglecting every thing that is Christian, worship false gods with the ancient classics. Such errors as these have a destructive influence on youth.

I have elsewhere discussed various other errors, both of teachers and of the lawgivers of pedagogy.

VIII. RESTORATION OF THE HUMAN POWERS.

Man is to "have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth." This dominion was that of the image of God, in the name of God; peacefully recognized by all creatures. Thus the painters place Adam and Eve in Paradise, at peace with the lions and tigers around them. But when man became disobedient to God, the creatures became disobedient to him; for they had revered him only as the viceroy of God.

There, however, remained to man a species of dominion, even after the fall. "And the fear of you," said God to Noah, "and the dread of you shall be upon every beast of the earth, and upon every fowl of the air, upon all that moveth upon the earth, and upon all the fishes of the sea; into your hand are they delivered."

But this was not the original peaceful dominion; it was a dominion of fear and terror. And a commandment of fear came also from the Lord. As he had before the fall given man all manner of herbs, and the fruit of trees, for food, so he said, after the flood, "Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things."

Therefore, even to the present time, the dominion of fallen man is such over the beasts, that they fear him, as rebels do the power of

their ruler; and his weapons, still more than his divine image. But the prophecies in Isaiah of a future time, when a young child shall lead a lion and a lamb together, and when the sucking-child shall play upon the cockatrice's den, point to a restoration of this human dominion over the beasts. Daniel in the lions' den, and Paul, whom, according to the Word of the Lord, the viper did not injure, are the forerunners of that dominion which man shall again possess, not by the power of his weapons, but by faith.

The passage of the Israelites through Jordan and through the Red Sea, the powerful prayers of Elisha for and against the rain, Christ's stilling of the storm by the words "Peace; be still," and his walking upon the sea—all these point to a future dominion of man over inorganic nature also; a moral dominion, in the power of faith, in the power of God.

The various healings of the sick point to a similar future power.

But, it may be said, all that we are saying relative to the restoration of human powers is simply arguing from a miraculous past to a miraculous future.

It is true that at present we have only the shadow of that past and future time; and it is only with that shadow that we have at present to do.

Thus thought the most judicious of philosophers, Bacon, when he said, "Knowledge and power are the same" (*Scientia et potentia hominis coincidunt in idem.*) In proportion as man knows nature, he rules it. Bacon every where requires, not merely a theoretical knowledge, but a practical, efficient power. With all theoretical knowledge of nature there goes also a practical art; an art of operating upon nature, mostly based upon scientific knowledge.

Thus we do in fact rule the creation, not by the mental magic of words, strengthened by faith; but we make it serviceable to us by searching into the nature and powers of different creatures, bringing them under our power, and setting one to work upon another.

We tame and improve animals, we improve plants, guide the lightning, constrain steam to serve us, fly by the aid of gas, cure by all kinds of medicine, and light is made to serve us in the place of artists.

In this realm man rules, and he seeks in all ways to extend his dominion. The present time boasts especially of this extension. But this is no gain, if all nobility of feeling, all sense for higher things, are to be choked and destroyed; if all intellectual power is to become slavishly subservient to the earthly; and if man, utterly blinded with his convulsive efforts, is to seek material objects only.

We are bound to strive against such ungodly and unworthy impulses. We may not be indifferent in whose name it is that we work; whether it is Moses who acts, or Jannes and Jambres. Both theoretical and practical natural science must be taught, in a right and pious manner; both must be sanctified, as well in principle as in purpose.

IX. THE CREATIVE POWER OF MAN.

When man, as the image of God, was placed as his representative in the dominion over the creatures, he was also himself shaped in the image of God.

It would seem that the Creator desired that his creatures should themselves partake of his creative power; for he conferred upon plants, beasts, and men the power of reproducing their kind, to all time; instead of himself forming one generation after another.

But to man he granted more; he granted him the gift of various creative powers, and an intelligent will for the free development of those powers. The bees build dodecahedric cells, not by a free and improvable art, but by instinct; they *must* make dodecahedra, just as the inorganic elements of a garnet crystal *must* gather into the same shape.

Of what kind, it might be asked, were these gifts in Adam, before the fall? Only one is mentioned in Genesis, that of speech. It was already observed that the Creator approved of the names which Adam gave to the beasts; and that these must therefore have expressed the real character of the beasts. In these names, humanly given, God's creation was mirrored, they were actual names; really *substantives*; arising out of the appearance of the creatures themselves. We, fallen men of the present day, can not make such names.*

We may consider this giving of the names by Adam as the first entirely complete expression of human speech; a completeness which later men have sought to equal in many ways, in prose and in poetry.

The very name of poet reminds us that he is an image of his Creator—a "maker." The greatest of poets has, in the *Midsummer Night's Dream*, thus described the poet:—

"The poet's eye, in a fine frenzy rolling,
Doth glance from heaven to earth, from earth to heaven;
And as imagination bodies forth
The forms of things unknown, the poet's pen
Turns them to shapes, and gives to airy nothing
A local habitation and a name."

Are not the forms born from Shakspeare's wondrously teeming

* We make great efforts to describe in as perfect a way as possible, and search out many words, mostly adjectives, so as to stick together a sort of mosaic picture in words, as perfect and similar as may be, of minerals, &c.

fancy—Macbeth, Hotspur, Desdemona, Shylock—indeed most of the persons in his dramas—so entirely individualized, independent men, that we might almost be tempted to assert that they have a more individual existence than do numberless actual human beings?*

Thus the poet creatively, by his words, reveals a rich interior world. And his poems even stimulate sensitive hearers to become poets themselves; to repeat his creative act.

The historian and the orator are related to the poet.

But above all the human arts of language, and different from them, stands in holy solitude the revealed Word of God, which through his efficient power causes the regeneration of the world. From its fullness, preachers, and singers of divine songs, draw their power over the hearts of their hearers.† In this holy realm, man finds a foretaste of the powers of the future world; of his return into his father's house.

As in the arts of language, so does the creative power of man express itself in fine arts. Raphael does not only give us true representations of localities and of men; he paints a new earth, a new heaven, and glorified saints like angels.

Thus we can trace this creative power in every art; in the sculptor, the architect, the musician; sometimes imitating, and sometimes idealizing, in a divine aspiration.

Every artistic gift implanted by God in the soul of a child must be faithfully cherished and trained. To this end the first requisite is, that his senses shall be trained: his eye to a true, clear, vivid apprehension of the visible world; his ear to true and keen hearing, &c. And with this development of the susceptibilities must sooner or later be connected that of the power of representation: of speaking, singing, writing, painting, &c.; that is, the development of the creating power. But, above all, his feelings must be purified and sanctified, that he may have no pleasure in impure artistic labors, in external beauty without internal moral goodness.

I can not utter a sufficiently emphatic warning against the usual abuses of these powers. The apostle James refers to the abuse of speech. "The tongue," he says, (and we may add, the pen and the press,) "is an unruly evil. Therewith bless we God, even the Father; and therewith curse we men, which are made after the similitude of God. * * * Doth a fountain send forth at the same place sweet water and bitter?" And it is said, in earnest warning, "For by thy words thou shalt be justified, and by thy words thou shalt be condemned."

* God did not make men and then depart, but they are of him and in him. Remain in him who made you. It is upon this truth that the real energy and actual existence of a human being depend.

† The Word, added to the element, makes it a sacrament."

These warnings are applicable both to speakers and writers; and to hearers and readers too.

The fine arts, especially, have variously and deeply sinned against purity; let us guard our children against impure pictures. Unholy and delusive passions characterize the modern music; let us return to the chaste and pure music of the ancient masters.

I pray the reader to receive with indulgence this attempt to base pedagogy upon principles; to set forth, though only in outline, its purpose and object. It is an endeavor to show that all human training must seek the restoration of the image of God; and that a Christian, ethical, intellectual, and artistic training, in particular, should contemplate the renewal of our similarity to God in holiness, wisdom, power, and creative energy. Such a training leads to holiness, which has the promise of this world and the next.

XII JOSIAH HOLBROOK.*

JOSIAH HOLBROOK, whose name is indissolubly connected with the earlier development of the Lyceum, and with the efforts to improve our system of popular education in America, was the son of Colonel Daniel Holbrook, of Derby, Conn., where he was born about the middle of 1788. Col. Holbrook was an officer in the Revolutionary war, and a man of wealth and influence. His son received the ordinary common school education of the day, fitted for college under Rev. Amasa Porter, of Derby, and entered at Yale College in 1806, graduating in 1810. Three years afterward, he married a daughter of Rev. Zephaniah Swift, of Derby. She died in 1819, leaving him two sons, Alfred and Dwight. On the death of his father and mother, at about this time, the care of the farm devolved upon Mr. Holbrook, and it was during the period occupied in this vocation that the ideas which were the central ones of his subsequent labors first occurred to his mind.

Acting on these views, he opened, about this time, on his own farm in Derby, in connection with Rev. Truman Coe, one of the first schools in America which sought to teach a popularized form of natural science, and to combine manual labor with education. Boys in this school were allowed to pay a portion of their expenses by laboring on the farm. The institution was not permanent, but the experiment satisfied Mr. Holbrook of the practicability of the principle. We quote from a letter of Mr. Coe, to a son of Mr. Holbrook, the following statements respecting this school.

"He had long cherished the idea of endeavoring to found an institution in which the course of instruction should be plain and practical; an agricultural school, where the science of chemistry, and mechanics, and land surveying should be thoroughly drilled into the mind of the pupils by practice. With these views the Agricultural Seminary was commenced in Derby in 1824, and continued to the fall of 1825, under the direction of your father and myself; and, as far

* We are indebted in part for the material of this memoir to our own correspondence with Mr. Holbrook; to letters furnished by his son, Dwight; and to a paper prepared by Rev. Cyril Pearl, of Maine, for insertion in this Journal, but which, proving too long, will be issued by its author in a separate volume, and will be found a valuable contribution to the Biography and History of Popular Education in the United States.

as I know, was the first educational movement of the kind in all that region. But the institution, being unendowed and on a private footing, labored under many embarrassments, especially in never having land enough to carry out and accomplish the ends of its founders. We did what we could to train the students in the *analysis of soils*, in the application of the mechanical powers to all farming operations, and took out our young men often into the field and country for practical surveying, geological excursions, road-making, and the labors of the farm; but, not being able at that time to place the school on an eligible foundation, it was abandoned."

While at work on his own farm, Mr. Holbrook's zeal in the pursuit of knowledge led him, with the design of increasing his acquaintance with chemistry, mineralogy, and geology, to attend the lectures of Prof. Silliman, at New Haven—riding over and back from Derby for the purpose, notwithstanding distance and an inclement season.

The precise train of thought and of circumstances which led Mr. Holbrook to transfer his efforts from the farm and school at Derby to the wider field of popular scientific lecturing, we have no data for tracing. The American Journal of Education, then conducted by Mr. William Russell, contains, in its tenth number, for October, 1826, a paper by Mr. Holbrook, setting forth his views on the subject of "*Associations of Adults for the Purpose of Mutual Education*," which we here insert, with the editor's introductory remarks, as the earliest printed exposition of his principles.

ASSOCIATIONS OF ADULTS FOR MUTUAL EDUCATION.

[The following article is from an individual whose attention has been long and peculiarly directed to the subject on which he writes; and who has contributed extensive and efficient service to associations modeled on a plan similar to that which is now presented to our readers. The subject here introduced to public attention is one of uncommon interest, when regarded in connection with the progress of general improvement by means of education; it is equally important in a political point of view, as intimately connected with the diffusion of intelligence, and with the elevation of character among the agricultural and mechanic classes; and to the friend of moral improvement it offers a source of peculiar gratification, as a sure preventive of those insidious inroads of vice, which are ever ready to be made on hours of leisure and relaxation.]

TO THE EDITOR.

SIR:—I take the liberty to submit, for your consideration, a few articles as regulations for associations for mutual instruction in the sciences, and in useful knowledge generally. You will see they are upon a broad basis; and the reason is, that men of views enlightened enough upon education to see its defects and its wants, and spirit enough to act, are scattered more or less through the country; and all that is necessary for action, is some definite plan of operation, by which their efforts can be united and brought to bear upon one point. It seems to me that, if associations for mutual instruction in the sciences, and other branches of useful knowledge, could once be started in our villages, and upon a general plan, they would increase with great rapidity, and do more for the general diffusion of knowledge, and for raising the moral and intellectual taste of our countrymen, than any other expedient which can possibly be devised. And it may be questioned if there is any other way to check the progress of that monster, intemperance, which is making such havoc with talents, morals, and every thing that

raises man above the brute, but by presenting some object of sufficient interest to divert the attention of the young from places and practices which lead to dissipation and to ruin. I do not doubt but alterations in the title and articles will be advisable; but I believe, most confidently, that something of the general plan may be carried into effect.

Society for Mutual Education.

The first object of this society is to procure for youths an economical and practical education, and to diffuse rational and useful information through the community generally.

The second object is to apply the sciences and the various branches of education to the domestic and useful arts, and to all the common purposes of life.

Branches of this society may be formed in any place where a number are disposed to associate for the same object, and to adopt the following or similar articles as their constitution:—

The society will hold meetings, as often as they think it expedient, for the purpose of mutual instruction in the sciences, by investigating and discussing them, or any other branch of useful knowledge. The several branches of Natural Philosophy, viz., Mechanics, Hydrostatics, Pneumatics, Chemistry, Mineralogy, Botany, any branch of the Mathematics, History, Political Economy, or any political, intellectual, or moral subject, may be examined and discussed by the society.

Any branch of the society may, as often as they think it expedient, procure regular courses of instruction, by lectures or otherwise, in any subject of useful knowledge.

The society, as they find it convenient, shall procure books, apparatus for illustrating the sciences, a cabinet of minerals, and other articles of natural or artificial production.

The society may aid in establishing and patronizing an institution, or institutions, for giving to youths a thorough education—intellectual, moral, and physical—and in the application of the sciences to agriculture and the other useful arts, and for qualifying teachers. The aid to be given by furnishing means for the pupils, by agricultural or mechanical operations, to defray or lessen the expenses of their education.

Any person may be a member of the society by paying to the treasurer, annually, one dollar. And ten dollars, paid at any one time, will constitute a person a member for life.

The money paid to the society for membership or otherwise shall be appropriated to the purchase of books, apparatus, a cabinet, aiding an institution for practical education, or for some other object for the benefit of the society.

The officers of each branch of the society shall be a president, vice-president, treasurer, recording and corresponding secretaries; five curators, and three delegates to meet delegates from other branches of the society in the same county.

The president, vice-president, treasurer, and recording secretary shall perform the duties usually implied in those offices. The corresponding secretaries shall make communications to each other for the benefit of the society, as discoveries, improvements, or other circumstances shall require.

The curators shall have charge of the library, apparatus, cabinet, and all other property of the society not appertaining to the treasury.

The delegates of the several branches of the society in any one county shall meet semi-annually, at such place as they shall choose, for the purpose of consulting upon measures for promoting the designs of the society, particularly for encouraging an institution for giving an economical and practical education, and for qualifying teachers.

The delegates from the several branches of the society in any county shall be called the board of delegates from the society for mutual education in that county.

The board of delegates in each county shall appoint such officers as shall be necessary for their organization, or for doing any business coming within their province.

Each board of delegates shall appoint a representative, to meet representatives from other boards, who shall be styled the board of mutual education for a given state; and it might be advantageous to have also a general board, embracing the United States.

It shall be the duty of the general or state boards to meet annually, to appoint a president and other officers, to devise and recommend such a system of education as they shall think most eligible, also to recommend such books as they shall think best fitted to answer the purposes for which they are designed, and to adopt and recommend such measures, generally, as are most likely to secure to the rising generation the best intellectual, moral, and physical education, and to diffuse the greatest quantity of useful information among the various classes of the community.

Any branch of the society will have power to adopt such by-laws and regulations as will be necessary for the management and use of the library, apparatus, cabinet, &c., and for carrying into effect any designs not inconsistent with the general object of the society.

Several institutions, essentially the same as here proposed, have already been formed in our country, and some of them are highly useful and respectable: that others may and will be formed, there is no doubt. The object of the above articles is to forward the formation of them upon a general plan, and to form a connecting link between them which will enable them to unite their efforts, and may possibly lead them to vie with each other in prosecuting their general object, which is certainly second to no one that ever enlisted the talents of the philosopher or of the statesman, or the feelings of the philanthropist.

A few weeks later, in November of that year, we find Mr. Holbrook at Millbury, in Worcester County, Mass., where he delivered a course of lectures on subjects in natural science, at the close of which he succeeded in inducing thirty or forty of his hearers, farmers and mechanics of the place, to organize themselves into a society for mutual improvement, which at his request was called "Millbury Lyceum No. 1., Branch of the American Lyceum."^{*}

The formation of this Lyceum at Millbury was closely followed by that of several others in towns in that vicinity, and these were soon combined, in pursuance of Mr. Holbrook's general plan of a Lyceum, into the "Worcester County Lyceum." The Lyceum of Windham County, Conn., and its constituent Town Lyceums, were also shortly afterward organized; Mr. Holbrook's efforts in their case being energetically aided by Rev. Samuel J. May, then of Brooklyn, in that county.

From this time forward, Mr. Holbrook, for a long series of years, devoted all his efforts to the organization of a system of institutions, to bear the collective name of The American Lyceum; which was to consist of a State Lyceum in each State, this again of its subordinate County Lyceum, and these of the ultimate constituent bodies or Town Lyceums. The exercises of these bodies contemplated generally the instruction of their members in such departments of science as were calculated to improve their knowledge of and skill in their occupations, and this instruction was to be given by essays and discussions among the members, on plants, minerals, &c., from the neighborhood, or on proper subjects in science and art; and by lectures, either by members or by invited speakers.

During the years immediately subsequent to 1826, Mr. Holbrook made Boston his center of operations. He commenced there, about the year 1828 or 1829, the manufacture of philosophical apparatus

^{*} This Millbury association has often been referred to as the first in America in the nature of a "Lyceum." It would not however be difficult to cite a number of earlier instances of analogous attempts, such as courses of popular lectures on science, societies for mutual improvement, &c., for which see "*Memoir of Dr. Griscom*," "*Life of Timothy Claxton*," "*History of Adult Education in England*," "*Life of Piatre de Rosier in France*," &c. It is intended to give, in a future number of this Journal, some contributions to a history of early American enterprises of this character. See note B, at the end of this article.

for common schools; in which enterprise he was much aided by Timothy Claxton.* This business is still carried on by his son, Dwight Holbrook, in connection with a corporation called the Holbrook Manufacturing Company.

One of the fruits of Mr. Holbrook's labors in the Lyceum cause during this period was the assembling of the meeting at Columbian Hall, in Boston, March 15th, 1830. The call to this meeting was issued in the name of the "State Committee of Lyceums," and its objects were stated to be "to receive reports on the progress of Lyceums, and the condition of common schools, and to acquire information as to the organization of infant schools, and the use of school and cheap scientific apparatus." The meeting was called to order by Mr. Holbrook, who stated its objects. Rev. J. Going, of Worcester, was appointed chairman; and Mr. Holbrook, chairman of the committee of arrangements. During this convention, Mr. Holbrook made a full exhibition of his school apparatus, and set forth his views as to its use and introduction. The discussions at this convention covered many important educational subjects, and one of its results was the appointment of the committee which drafted the constitution of the American Institute of Instruction, and called the convention to establish that body, which met at Boston, Aug. 19, 1830. Mr. Holbrook appears not to have been identified with this branch of the movement.

Another valuable suggestion of this convention was the recommendation of teachers' conventions, to meet at the time of the county lyceum meetings, for the purpose of forming associations for mutual improvement; and to hear lectures on educational subjects, from lecturers employed for that purpose. Numerous meetings of this kind were accordingly held during the following year.

Mr. Holbrook commenced, during the year 1830, an undertaking in another department of his chosen field of labor, by the publication of a series, entitled "*Scientific Tracts*," which were issued by him until the year 1832, with the view of furnishing useful information to the masses, on the same principle with the publications of the English Society for the Diffusion of Useful Knowledge. In that year Mr. Holbrook withdrew from the editorship of the "*Tracts*," and was succeeded by Dr. J. V. C. Smith.

This withdrawal was occasioned by Mr. Holbrook's desire to devote himself wholly to his labors for Lyceums, and to the interests of his weekly paper, "*The Family Lyceum*," which was commenced 28th July, 1832. This paper was intended to be the organ of his favorite enterprise; and, until its discontinuance after its first year, diffused

* See Note C.

among teachers and families a vast amount of useful miscellaneous popular information on scientific subjects, illustrated with many respectable wood-cuts.

At about the same period, a community of views brought Mr. Holbrook into communication with S. R. Hall, then at the head of the Teachers' Seminary at Andover; and he was appointed corresponding secretary of the School Agents' Society, organized in 1831, under the influence of Mr. Hall, "to procure and encourage traveling-agents in behalf of schools and education." This office he retained during the several years of the active operations of that society.

In February, 1831, Mr. Holbrook took an active interest in the formation of the Boston Mechanics' Lyceum, whose origin is thus given in the "*Young Mechanic*," for August, 1832.

The first meeting in favor of forming a Mechanics' Lyceum in this city (Boston) was called by Mr. Josiah Holbrook, February 5, 1831. Mr. Timothy Claxton presided, and Mr. W. S. Baxter acted as secretary. The evening was occupied by the discussion of this question, "Has any class of the community stronger inducements or better opportunities for mental improvement than practical mechanics?" which was decided in the negative. The meeting adjourned to February 12th, for the discussion of another question, and to take into further consideration the subject of forming a Lyceum. At this meeting, a proposition was made to form an association to be called the "Union Lyceum," and another, to form one to be called the "Mechanics' Lyceum," both of which were referred to the next meeting, which was voted to be held February 19th. The latter proposition prevailed at this meeting; and a committee was appointed to draft a constitution, to be reported at an adjourned meeting, February 25th.

The following persons were elected officers for the first season:—TIMOTHY CLAXTON, president; G. W. LIGHT, secretary; JAMES COOPER, treasurer; WM. S. DABRELL and JOSEPH WIGHTMAN, curators.

At the first regular meeting of the Lyceum, a system of exercises was adopted, consisting of an elementary course of mechanical philosophy and geometry, interspersed with discussions of interesting questions.

The subjects of the lectures were treated upon by the members of the Lyceum, seven of them taking parts on the evenings of the lectures, and each one occupying about a quarter of an hour.

At a meeting held June 7th, (the same year,) the following subjects for lectures were adopted, for the second term; viz., architecture, political economy, botany, geology, natural history, astronomy, biography of practical men. The members were left to choose their own subjects for essays. At a subsequent meeting, it was voted that declamation should be added to the regular exercises of the lyceum, which was afterward found to increase the interest and usefulness of the society.

About the year 1834, Mr. Holbrook left Boston, and for a few years occupied himself chiefly with an effort to introduce the lyceum system into the State of Pennsylvania. This was quite successful, and a large number of town and county lyceums were organized. During the course of these labors, Mr. Holbrook conceived a plan which illustrates the comprehensiveness of his views of what his favorite system could accomplish; viz., that of a Universal Lyceum, to include national lyceums in all parts of the world. A list of officers was made out, who were invited to act, with Lord Brougham

as president, and was published in a small pamphlet, the "*First Quarterly Report*," together with a brief outline of the aims of the institution. Mr. Holbrook's labors in Pennsylvania were also; as his correspondence shows, of great use in promoting the cause of common schools in that State.

Mr. Holbrook appears already to have been some time contemplating the idea of Lyceum Villages; which, in one of his letters to his friend, Mr. S. W. Seton, of New York, he terms "the central wheel" of his system. During his innumerable journeys, he made some excursions in Ohio, and apparently labored with some results in that State. In 1837, having found a site, twelve miles south-west of Cleveland, Ohio, with the advantages of good water-power, and a quarry of stone suitable for grindstones, Mr. Holbrook founded there the Lyceum Village of Berea. The land occupied by this enterprise, five hundred acres, was vested in an incorporated board of trustees; houses, shops, and a school-house were erected, and a flourishing settlement soon established. Berea was to have been the first of a series of Lyceum Villages, with which Mr. Holbrook would have dotted the country; and which were intended to be centers for the residence of all persons interested in the Lyceum enterprise, for the practical exemplification of its principles in schools, whose teachers and pupils were to spend some portion of every day in manual labor, for the education of teachers, and for the diffusion of the Lyceum system throughout the country. Unfortunately, however, the enterprise, after a few years, came to a disastrous close, and was transferred into other hands, leaving Mr. Holbrook under a heavy load of debt, which crippled all his subsequent efforts, and ended that distinctive character which Berea had at first assumed. A second Lyceum Village was also projected, and partially organized, at Westchester, N. Y.; the site being chosen with a view to ready co-operation with the efforts in progress in New York City.

We next find Mr. Holbrook established in New York City, where he was, as early as 1842, acting as central agent of his plan of School Exchanges, and where he occupied business-rooms in the building of the Trustees of the Public School Society, corner of Elm and Grand streets. This plan of exchanges formed a part of the original scheme of Lyceums, which were to exchange collections of minerals, &c., with each other, for their mutual instruction and advantage. As introduced, however, during his stay at New York, and afterward, the plan was intended to excite and maintain in the pupils of the schools of the country an interest in each other and in the study of the natural sciences, and to promote the collection of museums of natural and other objects in each school. This was to be done by means of

the collection, by the pupils of each school, of minerals, plants, &c., from its own neighborhood, and by the formation of collections of drawings, specimens of penmanship, sewing, &c., to be exchanged for similar or equivalent collections from other schools. These museums were to be made the basis of lectures on the various departments of natural science. The delivery of such lectures, in a plain and familiar style, and illustrated from materials every where at hand, had long been a means efficiently employed by Mr. Holbrook in operating upon the schools which he visited.

During his stay in New York, his friend, Mr. Seton, then Agent of the Public Schools, drew up with his assistance a scheme for applying his favorite principles of education to the schools in that city. This is to be found, under the title of "*Plan of Instruction*," in the "Fortieth Report of the Trustees of the Public Schools, for 1846." Its features are, his long-advocated plans of teaching drawing, in connection with writing and map-drawing, and its further prosecution to some extent as applied to machinery and architecture, and to natural objects; the collection of natural objects, the study of them, and oral lectures on them; and the system of school exchanges, as a means of extending the interest and value of the collections. A report on the progress of the plan, in the report of the Trustees for the succeeding year, indicates that its results were regarded as very favorable, so far as it was carried into effect.

In the Spring of 1849, Mr. Holbrook went to Washington, leaving his business in New York in the hands of an agent, intending to spend a few weeks in ascertaining what influences could be gained at that city in behalf of his enterprises. The results of his labors in the schools there and in that region, and his intercourse with public officers and members of congress, were such as to give him expectations of enlisting the assistance or influence of the federal government in some way in the wider extension and firmer establishment of his system of instruction, and that city remained his residence and the center of his operations until his death.

The following extracts from one of his letters to Mr. Seton, dated Washington, Nov. 10, 1850, will indicate the character of the means by which Mr. Holbrook was proposing to accomplish his objects. He suggests,

First, A proposal for the New York schools, public and ward, to direct their attention for one month to the simple definite object of preparing an offering, a free gift, for the president of the United States, for each member of his cabinet, and for every member of congress, making in the whole about three hundred of their free-will offerings.

Second, That these offerings contain, in each case, a map of the State of the recipient, and a map of Palestine; if practicable, a sketch of some geological form-

ation, showing some feature in the earth's structure, or some species of organic remains; also something agricultural, some domestic animal, perhaps a particular breed of sheep, cow, or horse, some plant of the farm or garden, or some implement used by the farmer. Something of school architecture, either in buildings or fixtures, would have a specific aim and tendency. Some written extract from ancient saints or modern statesmen, or some poetry of religious or patriotic tendency. Something from Moses, David, Isaiah, St. Paul, or, still better, from Him whom St. Paul preached; from Washington, Adams, Clay, Webster, or any other preferred.

You know I am partial to drawing and writing. "*Drawing before Writing*," given in a sheet prepared for the specific object of a "*little leaven*," is already powerfully operative in leavening the whole lump. As these have been done beautifully in primaries as well as the upper schools, and done rapidly, large numbers of them might be produced. * * * In addition to several of these simple specimens of "*Drawing and Writing*," in the packages to the members, millions would readily be distributed by them, scattered broadcast over the whole land, certain to prove good seed in good soil.

The third proposal is, to have them for New Year's Gifts, coming from the grand central wheel in the great commercial, to be cast into the other grand central wheel in the great political, metropolis:

My fourth suggestion is, by these and other stimulants and aids, to have as large and rich an exhibition at the next New York "Scholars' Fair" as possible, with the special design, publicly expressed, of having that followed by a similar exhibition in Philadelphia, then in Baltimore, then Washington, Richmond, Raleigh, Charleston, New Orleans, &c., &c.; taking a national circuit, which, once well started, will stop when the Hudson and Amazon stop. * * *

Another letter to Mr. Seton, written the next day, explains the results hoped for from the means thus enumerated, and well illustrates at once the strong practical tendencies, the enthusiastic hopefulness, and the vagueness in tracing lines of future action, which were prominent characteristics in Mr. Holbrook's character and labors.

* * * I will now give you several results, certain, as it seems to me, to arise from the elements named, if used as suggested.

First, An immediate and substantive benefit to the pupils aiding in the "New Year's Gifts" proposed. Hardly a principle in young beings, as the element and foundation of future life, will be left in doubt. Every lesson presented to them, on whatever subject, will be more thoroughly because more practically, learned. In reading, writing, spelling, grammar, arithmetic, geography, &c., &c., there will be stronger and higher mental action, because founded on a moral basis.

Second, Such a proposal or such exercises in New York would rouse the schools here, and in many other places, to similar action, eventually producing a retarding influence upon the schools of New York.

Third, It would directly enlist the "powers that be" here, from the president down, separately and jointly, in this common cause; leading all government functionaries, both state and national, to follow their example.

Fourth, A pacific tendency with the North and South; as in it there is no North and South. If the occasion should be somewhat imposing, it would have a very decided, possibly a controlling, influence in settling the disturbed and convulsed waters now causing our country to reel to and fro.

Fifth, "*Cent an ounce postage*," making the mail a "common carrier." The immediate call for such a system, by materials in actual possession of the law-makers, would almost of course be met by the necessities of the case. If every member of congress could receive at the same time a package of juvenile products for his own particular use, and be requested to distribute others *widely* among his constituents, the necessity of the case, and the popularity of the measure, acting through the country generally, would infallibly, I think, lead to a liberal post-office policy. Every one must see this one point to be of very great consideration to our whole country, in all its interests—political, commercial, scientific, social, moral, and religious.

Sixth, A national system of "Industrial Exhibitions," of the traveling order, bringing each exhibition to aid and be aided by all the rest. The specimens distributed as proposed over the country, presented in direct connection with this plan as one of the objects, would inevitably bring specimens from various places and in increased numbers to the next Scholars' Fair in the spring. Specimens thus sent in would at once furnish materials for commencing a traveling system of exhibitions, and create a deep interest in them. If, for example, the specimens should be sent from Philadelphia, those specimens in one way or another would be so much stock in business, and be certain to create a desire to have it reciprocated in that place. So it would be especially here, and, as one of its results, produce flesh and blood upon the "dry bones" here under the name of trustees. * * *

Seventh, A call for district professors for the whole country, to hold meetings once a month, or oftener, consisting perhaps of delegations from the schools in a given town or district. To illustrate: suppose county superintendents of schools be elevated into county scientific professors, to give monthly lectures in each town of the county, under an arrangement for all the schools to participate, not so much in hearing lectures as in preparing materials for instructing each other, under the occasion of the lectures and the aid of the lecturers.

Eighth, Giving an occasion for the "Lot Plan"* as the foundation of self-instruction, raising up professors to carry it out through the country. I am settled in the belief that such professors can never be prepared in our colleges. [Here Mr. Holbrook refers to some geological lectures lately heard by him, and contrasts the common method and his own by saying:] My geology consists of facts, actual things, about the earth. Theirs is speculation about the mode of the earth's existence. Mine tells me what mountains are. Theirs tells, or speculates, whether they were formed this way or that. Mine gives certain and interesting knowledge to young minds. Theirs, to a great extent, out of the reach of all minds, their own included.

But no definite and efficient co-operation seems to have been secured from any official source; and, during the years 1852 and 1853, his correspondence shows that occasional fits of despondency, doubtless in some measure the result of excessive mental labor, were annoying him; and he began to speak of leaving his work to be carried on by other hands. In May, 1854, he made a journey to Lynchburg, Va., on business connected with his enterprise; and, having walked out alone one morning, was evidently collecting minerals, as he had been busily engaged in doing for some weeks, from the face of a precipitous cliff, overhanging a deep creek, and lost his footing, fell into the water, and was drowned. He was not missed for a day or two, being supposed to be visiting in the vicinity; but, on searching for him, his body was found, on the 24th of May, floating in the water. He was interred in the burying-ground of one of the churches at Lynchburg, and his funeral was attended by a large number of persons, who had already become interested in his enthusiastic devotion to science and education.

The American Institute of Instruction, at its annual session, at Providence, R. I., in August following, on the announcement by Mr. Gideon F. Thayer, of Boston, of the fact and circumstances of his death, passed the following resolutions.

Whereas, Since the last annual meeting of the Institute, our associate and esteemed friend, Josiah Holbrook, has been removed by death from the scene of his early labors; therefore,

* This seems to have been a modification of Mr. Holbrook's scheme of a Lyceum Village.

Resolved, That, as lovers of science, of human progress, and of man, we, the members of the American Institute of Instruction, lament the loss, to ourselves and to the world, of Josiah Holbrook, one of the original members of the Institute.

Resolved, That in the example of Mr. Holbrook the young teacher is taught that energy, devotion to duty, and perseverance will accomplish every reasonable object at which the mind may aim; that a resolute will, and fixedness of purpose to one end, ever secure eventual success.

Resolved, That our whole community owes a debt of lasting gratitude to the deceased, as having been the father of the system of Lyceums, by which a taste for science has been excited, and the young of our cities and villages have been allured from frivolous if not hurtful pleasure, and instructed in subjects which enlarge, elevate, and improve the mind and heart.

Resolved, That, as teachers and friends of common school education, we hold in grateful remembrance the life and labors of Josiah Holbrook, who was among the first to introduce into our schools the use of apparatus for the illustration of Science, and to introduce and recommend the collection of geological specimens, to excite in the young an interest in the formation of the material world.

Resolved, That we sincerely sympathize with the bereaved family of the deceased in their affliction, and trust that the remembrance of his useful life, and beneficent efforts for the universal improvement of man, will abide with them, to assuage their grief.

Resolved, That these resolutions be entered on the records of the Institute, and that a copy of them, signed by the president and recording secretary, be transmitted to the family of the deceased.

Remarks in support of the resolutions were made by Messrs. Greenleaf, of Bradford; A. Greenleaf, of Brooklyn, N. Y.; and Z. Richards, of Washington, D. C., after which the resolutions were adopted unanimously.

While thus tracing a brief outline of the main facts of Mr. Holbrook's life, we have not attempted to give any extended statement or criticism of his views or purposes, nor of the system of instrumentalities by which he sought to realize them. We need not enter into the question of his merits in respect to the origination of the various educational reforms of the last quarter of a century. None can deny him the merit of having been a most faithful and efficient laborer in promoting many of the most important of them. A view of these will be found in the following appreciative sketch, by his early friend, Prof. Wm. Russell, which we gladly insert, at the risk of some unimportant repetitions.

RECOLLECTIONS OF JOSIAH HOLBROOK.

Among those friends of education who took an active part in endeavors for the improvement of schools, during the second quarter of the present century, none labored more strenuously or devotedly than Josiah Holbrook. Nor was he less active in the sphere of benevolent exertion for the diffusion of useful knowledge in scientific forms among adults, engaged in the various pursuits of life, and particularly those occupied in farming.

In both these spheres, his truly disinterested and philanthropic spirit, impelled by a zeal which habitually rose to enthusiasm, aimed at nothing short of an entire revolution in the forms and aspect of education in our schools of every grade, by introducing in them all, as the principal means of mental discipline and development, the study of natural objects, and of the common phenomena and processes of Nature, in the various departments of her great "kingdom." A

large share of his attention was bestowed on ingenious contrivances, also, by which the different departments of physical and mathematical science might be successfully illustrated. As a philanthropic reformer of society, he took a deep interest in the welfare of the laboring classes, and occupied much of his time in devising measures for securing to them the benefits derived from the pursuit of knowledge in the forms of science and of art, connected with the habitual occupations of individuals and communities. In these endeavors the greater part of his life was passed; and his lamented death was caused by his zeal in such pursuits.

As an active and efficient friend of education, aiming at results strictly practical and reformatory, Mr. Holbrook devoted himself, with great earnestness, to several prominent points of great importance, in his view, to the improvement of schools. One of these primary objects of attention was the introduction of the study of *botany*, in simple forms, adapted to the capacities and wants of young children. When visiting schools for this purpose, his method was to take the whole school and the teacher into the nearest field, and set all hands to work, gathering, for inspection, as many different forms of leaves as could be found. These were carefully examined and compared, their resemblances and differences closely observed and minutely discussed, in a brief oral field-lecture, consisting of conversational questions and answers between the instructor and his pupils. On returning to the school-room, the children were directed to place their gathered treasures of leaves, for preservation, in their old writing-books; each of which was thenceforward to wear the dignified name of "*folium*," or leaf-book. A subsequent employment for rainy days and spare hours was the drawing, on the blackboard or on the slate, the simple, elementary geometrical forms which lay at the basis of the different shapes of the leaves. This last exercise was performed under the direction of the instructor, with the aid of a little manual of geometry, adapted to juvenile pupils, and, in the case of more advanced classes, by reference to a set of geometrical solids, also prepared for the express purpose.

In this truly natural method of instruction, founded on a philosophical appeal to the constitutional tendencies of thought, and feeling, and action in childhood, there was a most successful exercise and development, and a judicious and skillful training, of two prominent faculties of the young mind—*observation* and *imitation*. The physical and moral effect, too, of the inspiring change from the confinement of the school-room to the sunlight and fresh open-air, together with the invigorating bodily activity attending the field-exercise, and, again, the alternation to the quiet seclusion and thoughtful application within doors, all tended to produce the happiest effects, not only for the passing hour, but for the tendencies and habits of life.

Here, moreover, was exemplified the true economy of teaching. Recess-time was rendered a brief season of healthful recreation; conducive, also, to genuine enjoyment and mental progress. Botany was so introduced as to lead to the practice of drawing, and drawing to the study of elementary geometry, while the arrangement of the leaf-book was, at the same time, giving a silent but most effectual lesson of order and neatness in habit, and thus laying the foundation for the subsequent philosophical discipline of classification. Under such training, which combines so many subsidiary exercises in but one apparent process of culture, the pupil is advanced and developed in his natural unity of life, heart, mind, and will, and cordially co-operates in his own education.

Another special object of attention in Mr. Holbrook's mode of procedure, was a practical course of study in elementary *geology*. His practice was, in introducing this branch, to "begin, continue, and end" with excursions and field-lessons, in all cases in which such a course was practicable; and many adults, in various parts of the United States, still remember with pleasure their participation in the benefits of such rambles in their school-days. In city schools, with pupils too young for the length of walk required for study in the field, his plan was always to teach with specimen in hand, and, in all cases, to encourage his classes to make collections, and contribute to the formation of school-cabinets. With a view to this result, he, for successive years, organized an extensive arrangement for the exchange of local collections of specimens; and, for the purpose of extending the moral interest of such collections, he enlarged his plan so as to embrace, in the system of school exchanges, specimens of drawing, penmanship, and needle-work by the pupils of schools in all parts of the Union. The effect of this part of Mr. Holbrook's plans was undoubtedly to "provoke unto love and good works" among the juvenile givers and receivers; although it gave rise to "skeptical doubts" in some minds as to the result of "so many irons in the fire."

An excellent feature of Mr. Holbrook's plans, and one of unquestioned benefit, was that of suggesting and procuring the introduction into schools of the *illustrative apparatus* which bears his name, and which his son continues to furnish to schools throughout our country. Mr. Holbrook, by his success in attracting the attention of teachers to the importance of using visible illustrations in all forms of instruction which admit of their use, rendered an invaluable service to the improvement of education, and contributed, in no slight degree, to the diffusion of those views which, of late years, have led to the introduction into our higher seminaries of those more complicated and costly illustrations which advanced instruction requires.

The main object of interest to Mr. Holbrook's own mind, was the establishment, throughout the United States, of *popular associations for the diffusion of scientific knowledge connected with the useful arts*. The plan and operation of a national system of regularly organized associations, furnished with "a central heart, conducting arteries, and returning veins," securing the circulation of a vital current of science throughout our country, was the favorite theme of his thoughts and the unceasing aim of his endeavors, during the greater part of his life. To bring his views and purposes to actual accomplishment, he traveled for successive years, from place to place, founding branches of what he fondly termed the "American Lyceum;" and many of these establishments remain as memorials of his benevolent enterprise, and still wear the designation of "lyceum," although the idea of connected ramifications was never perfectly realized.

Mr. Holbrook organized and conducted the first lyceum, so called, in his own town, in the State of Connecticut, with a class of mechanics and farmers, some of whom took part personally in the exercises of their weekly evening-class. Many towns and villages in New England owe, primarily, their weekly intellectual treat of a popular lecture to the genial spirit and persevering labors of Mr. Holbrook, the father and founder of the lyceum system. The influence which he has thus exerted on the intelligence, the tastes, and the habits of New England, will long continue, we may trust, to cause his name to be held in grateful remembrance.

To the earnest spirit and persevering endeavors of Josiah Holbrook, the city of Boston owes, in part, one of its most excellent institutions—the Lowell lec-

tures, from which source, as a perennial fountain, the streams of scientific instruction annually issue, for the benefit of thousands—not only of the citizens, but of the many visitors from various portions of New England, who are attracted, in not a few instances, by the high advantages for intellectual culture and enjoyment which that noble-hearted city affords, alike to the denizen of her municipal circle and the stranger within her gates. In the winter of 1828-9, Mr. Holbrook came to the city of Boston, for the double purpose of rendering service to the cause of education, by his customary visits to the schools, and of establishing a lyceum association, with a view to the effect which such an arrangement might exert on other towns accustomed, perhaps, to follow the lead of Boston, in matters of intellectual and social relation.

The English Society for the Diffusion of Useful Knowledge had, at the time referred to, called forth every where the sympathy and zeal of all friends of education and of popular progress. Mr. Holbrook, accordingly, having subjected his plan to such modifications as the circumstances of a city like Boston seemed to require, and having laid his views before men of influence in the place—among whose names were found, as ever, auspicious in such undertakings, those of Daniel Webster and Edward Everett, and others of like spirit—a public meeting, honored by the presence of such men, was held, which soon eventuated in the formation of the Boston Society for the Diffusion of Useful Knowledge, whose plan and proceedings suggested, it is well known, to the discerning mind of the late John Lowell, the idea of the admirable arrangement for the course of gratuitous public lectures which bears his honored name.

Nor can we here justly pass by the Boston Lyceum, formed under the influence of those views which originated with the mind of Mr. Holbrook, although submitted to those modifications which an independent organization in a populous city naturally required.

The success which Mr. Holbrook's endeavors met in his visits to the different parts of New England, with a view to the establishment of lyceums, induced him to continue his exertions in this connection and that of visiting schools, and to extend them into the Middle States. There he found a still wider field of action in his favorite purposes; and, in some places, the effect of his labors was to awaken an intense interest in the subject of popular education, where it had subsided or slumbered, and in some instances where the subject had been met in the spirit of unmitigated hostility. Such was the case in some portions of the State of Pennsylvania, where a vigorous movement in favor of education was in progress in certain quarters, but a bitter opposition was manifested in others.

Having secured the hearty co-operation of an influential licentiate of the Dutch Reformed Church, who recognized in their true light the purposes of Mr. Holbrook, he made an extensive tour in the interior of the state, presenting his views of practical popular education with such success that, ere many months had elapsed, a teachers' convention was held, in the full spirit of such a gathering, and to the great delight of the people generally, in Lycoming county—previously designated, in a popular phrase, as "*bear*" county. In this region, some of the former inveterate enemies of education were heard exclaiming, "*Yes, if this is education, we want it. This will make our sons better farmers; and they will know, when they are selling their farms, whether they are selling coal, and lime, and iron, too.*"

Still ardently pursuing his original plan of a national association for the diffusion of science among the people, Mr. Holbrook spent the latter part of his life in the District of Columbia, where he occupied himself in preparing the way

for the consummation of his cherished purpose of establishing in Washington city the head-quarters of a national lyceum. With this view, he devoted some time to the examination of the scientific institutions of the city, and the inspection of the condition of agriculture in the vicinity. In connection with the latter subject, he prepared a series of articles on agricultural chemistry, for the "*National Intelligencer*," which were read with great interest throughout the wide sphere of the circulation of that excellent paper. Occasionally he diversified his pursuits by excursions, undertaken for the purpose of exploring the geology and ascertaining the mineralogical wealth of the adjacent regions of Virginia.

On one of these tours, when boating not far from Lynchburg, tempted by an apparently valuable specimen, imbedded in the steep, rocky bank of the creek, he climbed to obtain it, and, trusting for support to his hold of a jutting portion of rock, it unfortunately gave way; and, whether owing to fatal hurts in his fall or his inability to swim, he was drowned in the deep pool below.

In his death, the great common cause of popular education met with an irreparable loss, which, every year, is felt more deeply as his wide views and disinterested life come to be understood and more justly appreciated, and the teachings of Agassiz have led instructors to feel more deeply the great value of the study of Nature, as the divinely-appointed school of the young mind.

Teachers, too young to have held intercourse with Mr. Holbrook, sometimes ask the question, Why was he not more successful in his purposes—why was he not more adequately supported in his noble endeavors? The answer is easy to those who knew him—a quiet, retiring, unostentatious man, little attentive to the conventional circumstances of arbitrary social life, somewhat negligent of appearances, never caring to assert himself, strong in his conscious good purposes, enthusiastic in the contemplation of a great plan of practical utility, utterly indifferent to "filthy lucre," walking twenty miles on a stretch for the "largest liberty" of geologizing or botanizing, making all his experiments on metals with his own hands in the blacksmith's shop. On one occasion, the writer of this communication met him issuing from such a scene in the streets of Brooklyn—his working-coat both shabby with age and badly torn; his face begrimed with smoke and soot, and his hands in the same condition; but his eye gleaming, from under its heavy, massive eyebrow, with delight at the result of his operation, and his whole soul buoyant with the amount of business then daily done at his School Exchange Office in Canal Street, New York—packages arriving daily from the furthest east, west, north, and south. As he left the ferry for his office, he pursued his way along Broadway, utterly unconscious of the state of his outward man, but evidently in an inward "glory and a joy" as deep-felt as that of the peasant-poet in his raptures of inspiration.

The unworldly spirit of Mr. Holbrook, his shyness in society, the plain style and tenor of his daily life, and his entire absorption in his peculiar plans and purposes, all laid him open to misapprehension; and to some, who formed their conceptions of the man from first impressions or slight acquaintance, it was matter of surprise to be informed that he possessed the advantages of liberal education, and was a respected graduate of Yale College. Had he presented himself in certain circles among us, with the prestige of an unpronounceable foreign name, and the insignia of some European scientific institution, his views and aims would probably have met with a flattering recognition. It pleased him better to be what he was—a plain, straightforward man, a practical teacher of childhood and youth, and an unpretending friend of popular progress. The

publicity which his peculiar position involved, and which some who did not know the man attributed to a love of notoriety, was an unavoidable, not an intentional, result of the course which he had to pursue, working out—for the most part, alone and unassisted—a scheme for the general good, and of which he necessarily became the sole advocate and representative.

From his zealous activity in introducing into schools the use of the illustrative apparatus which now bears his name, and from which it was supposed by some that he derived a large personal share of profit, pecuniary motives were sometimes attributed to the mainspring of his ceaseless exertions for the accomplishment of his public purposes. To those who knew him intimately, and who daily observed his stoical indifference alike to personal enjoyment and personal advantage, the imputation of such motives was an utter absurdity. But had he even levied a liberal contribution from the extensive sale of the various articles which were so generally adopted in consequence of his references to their use, it would have in no respect differed from any other usual, fair business transaction. To all considerations of personal advantage, however, he was only too indifferent. It was his part to pass through life with "clean hands and a pure heart," and self-denying devotion to the good of others. His brightest moments of enjoyment were those in which a child, confiding in his sympathy, would come up to him, holding up a wild-flower, and questioning him about its nature or its name; or when an intelligent teacher would manifest a warm interest in the interpretation of Nature, as a part of her own daily duties to her juvenile dependents.

Let one of these faithful guides of the young mind speak the experience of many such. The writer of this article quotes her words without her knowledge or permission, but with no violation, he trusts, of the privacy of an humble daily life of useful toil. The note from which the following is an extract was addressed to that indefatigable laborer in the service of education, the Rev. B. G. Northrup, state agent of the Massachusetts Board of Education. Referring to a lecture by that gentleman before a teachers' institute, the writer proceeds:—"Permit me, a stranger, to express to you the surprise and pleasure with which I listened to the just and true tribute of respect paid by you to the memory of the beloved and lamented Holbrook. I think it will be pleasant to you to learn that his labors were not wholly lost. You expressed a fear that there were none now who carried out his plan of 'object teaching.' I know of *one* who, through a long experience in teaching, has always devoted some part of every day to this and similar exercises, and who was first taught it by Mr. Holbrook himself, more than thirty years ago, when a little girl in the public school in Greenfield, Mass., a school which Mr. H. visited and instructed, and imbued with his own love of Nature in all its forms—plants, minerals, and shells; stars, storms, and sunshine.

"I doubt not there are many others from that same town-school—which, in due time, sent out a score of teachers—who have also been practicing on those principles and that manner of teaching. We have all taught 'in the shade:' the great world has never heard of us. But the children who love us, and who love our 'lessons in thinking,' or 'lessons on objects'—as we sometimes call them—will never forget to *observe*, and *notice*, and *compare*, or forget the difference between '*eyes and no eyes*.' We have governed our schools by love and confidence rather than by fear, and all, (as far as I have learned,) have had great success in gaining the affection and esteem of our pupils. I have had over a

thousand different scholars under my care; and I have reason to think there are few that do not look back with interest and pleasure on the days spent in my school.

"We all were aided in our youthful efforts in teaching by a meeting of the teachers' institute, held, I believe, in 1851, at Greenfield, Mass., and conducted, (if my memory serves me right,) by the Hon. Horace Mann, assisted by Mr. Holbrook. At that meeting, lessons in astronomy, arithmetic, and geometry were explained and illustrated, and a new method of teaching the alphabet explained by Mr. Mann, which I have always used, and which I consider superior to any I know of. The lessons in geometry and mathematical geography I have always been obliged to teach by rough models, of our own manufacture."

To these recollections and appreciative estimate of the subject of this memoir, we append an eloquent tribute to his educational services and personal character by Hon. Samuel S. Randall, superintendent of schools for the city of New York.

As early as 1826, Mr. Holbrook laid in Massachusetts the foundations of that system of lyceums and literary and scientific associations which has since pervaded our land, and produced a rich harvest of knowledge; and at about the same period gave the first impulse to that great legislative movement, by which state geological and mineralogical surveys were instituted, and the immense physical resources of our national borders explored and illustrated. These important results originated in the instructions gratuitously communicated by him to classes of children whom it was his custom, during his whole life, to attract around him by his interesting, simple, and familiar expositions of natural history. Collecting specimens of the various minerals, metals, and fossils of every neighborhood he visited, and rendering himself acquainted with its topography and physical resources, he taught his delighted pupils the elementary principles of science, stimulated them to investigate nature for themselves, to make collections of all the varieties of rocks and mineralogical specimens which the region afforded, to execute simple maps and drawings of the towns and counties of which they were residents, and of such other objects as were most familiar, and to institute a system of exchanges with the children of other neighborhoods, by means of which a community of interest and of exertion might be secured and perpetuated.

These specimens and drawings soon attracted the attention of parents and others interested in scientific pursuits; they were produced for exhibition at school examinations and public gatherings, and found their way to legislative committees, who failed not to perceive their eminent utility, and their ready adaptation to practical purposes. Associations for scientific improvement were at once formed among the young, and organized, under the supervision and auspices of this indefatigable philanthropist, into lyceums and institutes. Members of the legislature were furnished with county and state maps, the product of young hands and the offering of young hearts; and the project was forthwith conceived of a general and accurate survey of the state, with a view to the development of its resources and an exposition of its capabilities. The example of Massachusetts, in this respect, was speedily followed by the adoption of a similar resolution in our own and other states, and the results of these wise measures are now before us in a series of volumes, the product of the most eminent and distinguished scientific authors of our age and country.

The system of scientific exchanges now so prevalent, and one department of which has received so great a share of legislative encouragement and regard, followed in the train of these great movements; and their philanthropic originator, careless of fame, and content with the consciousness of having promoted the true and lasting welfare of the rising generation, interposing no claims, and putting forward no pretensions, to recognition or reward, left the early and active scene of his labors only to renew them elsewhere. Having transferred himself to the city of New York, he unfolded his plan of operations to a few select friends, capable of appreciating his views, and prepared to co-operate with him in their realization. Here he met with much encouragement and practical assistance, and here, year after year, were gathered, in one of the rooms of the hall of the Board of Education, the noblest and finest specimens of science and of art which the children of the public schools, and such others as could be induced to interest themselves in these attractive operations, could produce. From this rich depository, were, from time to time, forwarded to every section of the Union choice selections, with the view of eliciting exchanges; and here were busily and profitably engaged hundreds of active young hands and minds, whose energies might, but for this judicious employment, have been diverted to vice and crime.

Having thus laid the foundation for extensive usefulness in his peculiar field of operations here, Mr. Holbrook turned his attention to the South; there, as here, he surrounded himself daily with eager and attentive young listeners—exciting their curiosity and stimulating their exertions by displaying the beautiful and attractive tokens of regard forwarded by their young friends in New York, and pointing out to them the mode by which these most acceptable tokens and remembrances might be reciprocated. Then, after having penetrated the rural districts of Virginia, diffusing light and knowledge wherever he went, and meeting with the kindest and most generous appreciation of his labors and his motives, he succeeded in enlisting the interest and sympathies of the most intelligent and influential men of that "Ancient Dominion" and its adjacent borders; and, repairing to the seat of government, he at once secured the co-operation and countenance of the occupants of the various executive and legislative departments, of the representatives of foreign courts, and of the municipal authorities of the city. Indefatigable in his desire to advance his favorite system, and disregarding the numerous indications of approaching age and failing health, he was induced, during the summer of 1854, to visit the city of Lynchburg, in Virginia; where, in one of his geological excursions, unaccompanied by any of his friends or pupils, he accidentally lost his footing on a steep cliff, overhanging a deep stream of water, into which he was precipitated, and where his lifeless remains were some days afterward discovered.

There, in a secluded corner of the churchyard, followed to his long home by a train of weeping children and pupils—far from the friends and associates who knew and loved him longest and best, reposes all that was mortal of one of the kindest, noblest, purest, and most disinterested and devoted friends of humanity! Long, long after the fleeting and transitory triumph of the politician and the warrior, and the busy schemes of the proud, the vain, and the wealthy, shall have faded into insignificance and oblivion and been forgotten, will his work of humble and unpretending usefulness, his labors for the benefit and advancement of the young, remain an imperishable monument of his untiring philanthropy and ever-active beneficence. How seldom does the world recognize its truest

benefactors! how little do mankind appreciate the immortal few among them, but not of them, who, amid the pressure of straitened circumstances; surrounded by innumerable embarrassments and obstacles; borne down by pain, by illness, and physical suffering; and oppressed by mental anxiety and harassing cares; "press right onward, bating not one jot of heart or hope," in the path of duty; diffusing around them, on every hand, the elements of knowledge, of wisdom, and of happiness; "sowing by the side of all waters" those precious and invaluable germs of future excellence, destined for perennial growth and progress; seeking no other recognition than that of kindred spirits, and asking and receiving no other reward than the consciousness of a life well spent!

Such was JOSIAH HOLBROOK. In the congenial soil of his noble nature, every Christian virtue took deep root, and yielded an ample and luxuriant harvest. With no personal aspirations, no desire for fame, no ambition for individual advancement, and no wish for wealth, he sought only the welfare and happiness of others, and was content to know that these were secured, to pass on his unassuming way. A welcome inmate in every social and domestic circle, the idol of the young, the dignified companion and counselor of mature age, the warm-hearted friend, and the devout and earnest Christian, his memory will long be cherished and revered by those who knew his worth, and enjoyed his confidence and regard. His venerable and beloved form has forever passed from among us; but we know that his emancipated spirit has winged its flight to those blissful regions where "the wicked cease from troubling and the weary are at rest."

"Green be the turf above thee,
Friend of my better days;
None knew thee but to love thee,
None named thee but to praise!"

NOTE A.

AGRICULTURAL SEMINARY AT DERBY.—A former pupil of the Seminary at Derby has furnished us with the following account of its plan of operations for the first half-year.

"You ask me what I remember about the Academy of Messrs. Josiah Holbrook & Truman Coe. It was established in the town of Derby, in this State, in the spring of the year 1824, and was, I believe, discontinued after one or two years. The Prospectus published in the newspapers of that day gives an outline of the course of study and the plan of operations. It is substantially as follows:—

"The exercises designed are the study of the Latin, Greek, French, and English languages, Rhetoric, Elocution, Geography, and History:—the Mathematics, as Arithmetic, Algebra, Geometry, Plane and Spherical Trigonometry, Mensuration, and Fluxions, Natural Philosophy in its various branches:—Astronomy, Chemistry, Mineralogy, Botany, and Zoology. No efforts will be spared to render these sciences practical, and fitted to common life. With that view, particular attention will be given to Composition, Declamation with extempore debates, the uses of the higher branches of Mathematics in common business, Practical Surveying, the application of Natural Philosophy to various kinds of machinery, agricultural instruments, &c.,—testing the principles of chemical science in mixing and preparing soils, forming manures, making cider, beer, spirit, and various other articles of agriculture and domestic economy, agricultural, geological, and botanical excursions into various parts of the country, examining and analyzing soils, and practical agriculture."

"One prominent object of the school is to qualify teachers. The most approved methods of instruction will be introduced, and lectures will be given on most of the Physical Sciences, attended with demonstrations and illustrations sufficiently plain and familiar to admit of their being introduced into common education. Courses on Natural Philosophy, Chemistry, Mineralogy, and Botany, will commence at the opening of the Seminary. Ladies will be admitted to the lectures, and there will be a department connected with the institution, where females can pursue any branch of Education they may wish."

"The number of scholars of both sexes, during the summer of 1824, was perhaps 50 or 60; among whom were five boys from New Haven, about as many from New York, and some from other places, near and remote. The school was certainly an attractive and pleasant one, and those who were so disposed made good progress in useful learning. Several of the boys were intrusted with surveying and leveling instruments, and used them frequently and successfully. Mr. Coe gave special attention to the mathematical studies, and Mr. Holbrook gave lectures and instruction in natural history and allied subjects. The boys rambled extensively over the hills of that region, did some work in hoeing corn and potatoes and in making hay, and once made a pedestrian excursion for minerals, to Lane's mine in Monroe."

"The working of the school was harmonious,—a spirit of study generally prevailed among the pupils, and the supply of out-door exercise and sports was ample."

NOTE B.

LYCEUM—ORIGIN OF NAME; PROGRESS.

The name Lyceum has been transferred from the local appellation of a building or grove, used for gymnastic exercises, in the suburbs of Athens. This was called the Lyceum, because it was near the temple of Apollo Lycius, "the destroyer of wolves" (*Lukoi*). It was made over to Aristotle, to be used by him as a place for delivering his instructions, and as such became famous under its local name. The word was adopted in modern times, and made a generic term or common noun, to designate schools where the philosophy of Aristotle was taught, and subsequently in France to institutions for giving a higher grade of instruction to adults, upon a plan sometimes in whole or in part mutual or conversational, and thus somewhat similar to the lectures in which Aristotle gave his instructions at the original Lyceum.

These lectures are supposed to have been of two kinds; those which he delivered in the forenoon, to confidential—"esoteric"—hearers, on abstruse subjects in philosophy, nearly answering to theology, and on physics and dialectics; and, secondly, those which he delivered in the afternoon, to a less select or "exoteric" audience, which included rhetoric, sophistics, and dialectics, and were of a more popular character. Such courses of lectures, which were then usually given by philosophers eminent enough to be at the head of a school, corresponded in some measure to the collegiate or university education of the present day. Aristotle's instructions were delivered while he and his pupils walked about in the grounds of the Lyceum; and his school was under certain regulations for the preservation of order and decorum.

The name was applied to an institution opened in Paris, in 1786. Pilâtre de Rozier, the celebrated aeronaut, and who perished by falling from his balloon, had some years before attempted to establish, under the name of "Museum," an institution for the improvement of adults, of which we find no very full account, but which seems to have resembled quite strikingly, in some of its chief features, the American Lyceum. It included a collection of natural objects, and a library. But it was pecuniarily unsuccessful, and was dissolved; the collection and books being sold. A number of gentlemen of literary taste, some little time afterward, associated themselves together to establish another institution, on a plan improved and enlarged from that of de Rozier's museum, and which they called the Lyceum. At the rooms of this institution, daily lectures were delivered by M. de La Harpe, an eminent author and critic, during the period from 1786 to 1794; when they were interrupted by his imprisonment, and were subsequently resumed for a time. These lectures were to some extent similar to our present popular lectures; or rather to the courses on the Lowell foundation, and sometimes to those before our various young men's institutes. They were of a popular character, and were attended by numerous audiences of the most fashionable people of the day. They were upon the history of literature, and included much collateral disquisition, and particularly criticism. The author subsequently published their substance, under the title of "*Cours de Littérature*." The work has become a standard one, and has been often republished, and variously edited, with notes and additions. The lectures of La Harpe appear to have constituted the principal instruction of the Lyceum, as the celebrity of the institution did not survive his connection with it.

The name has, during the present century, been applied in France to a class of schools corresponding to the gymnasiums of Germany, and the academies and public high schools of this country.

The Conservatory (*Conservatoire*) of Arts and Trades, in Paris, which originated with Vaucanson, in the reign of Louis XVI., but did not take specific shape

and action until 1796, embodies, in a systematic form, many of the ideas of the Lyceum, as proposed and labored for by Josiah Holbrook, for all classes of persons and interests, from 1828 to 1840. It has grown with the development of national industry, and the progress of science; and, aided by annual governmental grants, it has become consolidated into an institution. Its thirteen galleries of materials and of machines may be called the archives of industrial arts. Its lectures, scientific and practical, delivered in a large amphitheater, are crowded in the winter evenings by representatives of the working classes. Similar institutions, but resembling more the mechanic institutions of England, exist in the principal manufacturing towns of France.

MECHANICS' INSTITUTIONS. SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE.

The history of the *Mechanics' Institution* through all its phases of development, from the earliest young men's mutual improvement society established in London, in 1690, with the encouragement of Defoe, Dr. Kidder, and others, under the name of "Society for the Reformation of Manners"—the Society for the Suppression of Vice—the "Reformation Society of Paisley" in 1787; the Sunday Society in 1789, the Cast Iron Philosophers in 1791, the first Artizans' Library in 1795, and the Birmingham Brotherly Society in 1796, all among the working classes of Birmingham;—the popular scientific lectures of Dr. John Anderson, to tradesmen and mechanics in Glasgow, in 1798—the establishment of the Anderson's University at that place in 1796, and the incorporation into it of a gratuitous course of elementary philosophical lectures by Dr. Birkbeck in 1799, for the benefit of mechanics,—the Edinburg School of Arts in 1821, the Glasgow Mechanics' Institute, the Liverpool Mechanics' and Apprentice's Library, and the London Mechanic Institution in 1828—which from this date, through the labors of Dr. Birkbeck, Mr. Brougham and others, spread rapidly all over the kingdom until there are now over 700 societies scattered through every considerable village, especially every manufacturing district in the kingdom, numbering in 1848, 120,000 members, 408 reading-rooms, and 815,000 volumes—constitute one of the most interesting chapters in the educational or social history of Great Britain.

In 1825, as one of the direct results of the extended and growing interest in mechanic institutions and popular libraries, the "Society for the Diffusion of Useful Knowledge" was formed; which commenced immediately a series of cheap and useful publications in a great variety of subjects, and thus led the way to a new era in English literature—the preparation of books adapted in subject and mode of treatment, as well as in price, to the circumstances of the great mass of the people. In 1831, this society commenced a quarterly journal of education, which was discontinued in 1836, at the close of the tenth volume. In 1836, two volumes of essays on education, several of them delivered as lectures before the American Institute of Instruction, were published by this society. These twelve volumes, and the four volumes published by the Central Society of Education, composed of several of the most active and liberal-minded members of the former society, contributed a large mass of valuable information as to the organization, administration, and instruction of public schools in different countries, and prepared the way, in 1839, for the appointment of the Committee of Privy Council on Education. Besides these educational works, the society published other books, comprehended within the intended scope of its action, to the number, in all, of more than two hundred volumes. Among these were the "*Penny Magazine*;" the "*Penny Cyclopædia*;" a series of more than two hundred maps; a "*Gallery of Portraits*," in seven volumes; "*Statistics of Great Britain*," by Mr. M' Culloch, in five volumes; a complete series of agricultural works; two extensive series of volumes called the "*Library of Entertaining Knowledge*," and the "*Library of Useful Knowledge*," which were published in parts or pamphlets; De Morgan's "*Differential and Integral Calculus*;" tables of logarithms and numbers, and of statistics on annuities, savings banks, and mechanics' institutes. The

society also commenced a "*Biographical Dictionary*," on a magnificent scale and of great value; but this was unfortunately discontinued after the publication of seven volumes, containing letter A. The circulation of the preliminary discourses to this series of publications, reached 100,000 copies; that of the weekly "*Penny Magazine*," over 200,000; of those of its books of a more popular character, sometimes 40,000; and of many of the scientific ones, 25,000.

FRANKLIN'S CLUB FOR MUTUAL IMPROVEMENT.

Franklin formed a Lyceum, in effect though not in name, in Philadelphia, in 1737, of which he gives the following account in his "*Autobiography*."

In the autumn of the preceding year, (1737,) I had formed most of my ingenious acquaintance into a club for mutual improvement, which we called the Junto; we met on Friday evenings. The rules that I drew up required that every member, in his turn, should produce one or more queries on any point of morals, politics, or natural philosophy, to be discussed by the company; and once in three months produce and read an essay, of his own writing, on any subject he pleased. Our debates were to be under the direction of a president, and to be conducted in the sincere spirit of inquiry after truth, without fondness for dispute, or desire of victory; and, to prevent warmth, all expressions of positiveness in opinions, or direct contradictions, were after some time made contraband, and prohibited under small pecuniary penalties.*

The club was the best school of philosophy, morality, and politics that then existed in the province; for our queries (which were read the week preceding their discussion) put us upon reading with attention on the several subjects, that we might speak more to the purpose; and here too we acquired better habits of conversation, every thing being studied in our rules which might prevent our disagreeing each other; hence the long continuance of the club.

At the time I established myself in Pennsylvania, there was not a good book-seller's shop in any of the colonies to the southward of Boston. In New-York and Philadelphia, the printers were indeed stationers, but they sold only paper, &c., almanacs, ballads, and a few common school-books. Those who loved reading were obliged to send for their books from England; the members of the Junto had each a few. We had left the alehouse, where we first met, and hired a room to hold our club in. I proposed that we should all of us bring our books to that room; where they would not only be ready to consult in our conferences, but become a common benefit, each of us being at liberty to borrow such as he wished to read at home. This was accordingly done, and for some time contented us. Finding the advantage of this little collection, I proposed to render the benefit

* Dr. Franklin's account of the members of this club is amusing. "The first members were Joseph Brientnal, a copyer of deeds for the scriveners; a good natured, friendly, middle-aged man; a great lover of poetry, reading all he could meet with, and writing some that was tolerable; very ingenious in making little nicknackeries; and of sensible conversation. Thomas Godfrey, a self-taught mathematician, great in his way, and afterward inventor of what is now called *Hodley's Quadrant*. But he knew little out of his way, and was not a pleasing companion; as, like most great mathematicians I have met with, he expected universal precision in every thing said, or was forever denying or distinguishing upon trifles, to the disturbance of all conversation; he soon left us. Nicholas Scull, a surveyor, afterward surveyor-general, who loved books, and sometimes made a few verses. William Parsons, bred a shoemaker, but loving reading, had acquired a considerable share of mathematics, which he first studied with a view to astrology, and afterward laughed at it; he also became surveyor-general. William Manbridge, joiner; but a most exquisite mechanic, and a solid, sensible man. Hugh Meredith, Stephen Pettit, and George Webb, I have characterized before. Robert Grace, a young gentleman of some fortune; generous, lively, and witty; a lover of punning, and of his friends. Lastly, William Coleman, then a merchant's clerk, about my age, who had the coolest, clearest head, the best heart, and the exactest morals of almost any man I ever met with. He became, afterward, a merchant of great note, and one of our provincial judges. Our friendship continued, without interruption, to his death, upward of forty years."

from the books more common, by commencing a public subscription library. I drew a sketch of the plan and rules that would be necessary. So few were the readers at that time in Philadelphia, and the majority of us so poor, that I was not able, with great industry, to find more than fifty persons (mostly young tradesmen) willing to pay down for this purpose forty shillings each, and ten shillings per annum; with this little fund we began. The books were imported; the library was open one day in the week for lending them to subscribers, on their promissory notes to pay double the value if not duly returned. The institution soon manifested its utility, was imitated by other towns, and in other provinces. The libraries were augmented by donations; reading became fashionable; and our people, having no public amusements to divert their attention from study, became better acquainted with books; and in a few years were observed by strangers to be better instructed, and more intelligent, than people of the same rank generally are in other countries.

This library afforded me the means of improvement by constant study; for which I set apart an hour or two each day, and thus repaired in some degree the loss of the learned education my father once intended for me. Reading was the only amusement I allowed myself. I spent no time in taverns, games, or frolic of any kind, and my industry in my business continued as indefatigable as it was necessary. My original habits continuing, and my father having, among his instructions to me when a boy, frequently repeated a proverb of Solomon, "*Seest thou a man diligent in his calling, he shall stand before kings, he shall not stand before mean men,*" I thence considered industry as a means of obtaining wealth and distinction, which encouraged me; though I did not think that I should ever literally stand before kings, which however has since happened, for I have stood before five, and even had the honor of sitting down with one (the King of Denmark) to dinner.*

The late Dr. Smith, provost of the University of Pennsylvania, in his discourse upon the death of Dr. Franklin, alludes to the Junto in the manner following. The questions, which he has selected from those discussed in that club, are curious as a sample of the diversity of their inquiries, and may still be interesting topics of discussion in our Lyceums.

"This society, after having subsisted forty years, and having contributed to the formation of some very great men, besides Dr. Franklin himself, became at last the foundation of the American Philosophical Society, now assembled to pay the debt of gratitude to his memory. A book, containing many of the questions discussed by the Junto, was, on the formation of the American Philosophical Society, delivered into my hands, for the purpose of being digested, and in due time published among the transactions of that body. Many of the questions are curious and cautiously handled; such as the following:—

How may the phenomena of vapors be explained?

Is self-interest the rudder that steers mankind; the universal monarch, to whom all are tributaries?

Which is the best form of government, and what was that form which first prevailed among mankind?

Can any one particular form suit all mankind?

What is the reason that the tides rise higher in the bay of Fundy than in the bay of Delaware?

How may the possession of the lakes be improved to our advantage?

Why are tumultuous, uneasy sensations united with our desires?

Whether it ought to be the aim of philosophy to eradicate the passions?

How may smoky chimneys be best cured?

Why does the flame of a candle tend upward in a spire?

Which is least criminal, a *bad* action joined with a *good* intention, or a *good* action with a *bad* intention?

Is it consistent with the principles of liberty, in a free government, to punish a man as a libeller when he speaks the truth?

These, and similar questions of a very mixed nature, being proposed on one evening, were generally discussed the succeeding evening, and the substance of the arguments entered in their books."

* Franklin's Memoirs and Works, Vol. I., pp. 62, 63, &c.

NOTE C.

TIMOTHY CLAXTON.

TIMOTHY CLAXTON* was born at Earsham, Norfolk, in England, on the 22nd of August, 1790. His father was a gardener in the service of the Windham family, at Earsham Hall—honest and industrious; but, as was his mother, not able to read or write. They did their best to secure for their children an education, and in this were assisted by the Hon. Mrs. Windham, who, while she lived, kept six boys and six girls at school, for two years each. When thirteen years old, he was apprenticed to a white-smith; which craft he acquired, and practiced for thirty years. With the first money, (a half-guinea,) which he received as a Christmas-box, from his master's customers, he bought a Bible, and a thick cyphering-book; and in the latter commenced, forthwith, to prosecute his arithmetical studies; and, as he grew older, exercising his mechanical ingenuity in making all sorts of curious and artful machines. During his minority, he was often called on to write letters for his father, and his neighbors; and thus acquired facility in composition. He, at the same time, began to practice drawing. In 1810, he removed to London; and, for the first time, saw a steam-engine, heard a lecture, and read a book on subjects connected with the arts and sciences. When just turned of twenty-one years of age, he attended a weekly course of popular lectures on natural philosophy, by Mr. Tatum; taking notes, and afterward writing out the lectures as full as he could recollect, and making drawings of the apparatus. He also procured and read a book on the same subject. In 1816, he succeeded in getting up a mechanical institution,† which was in operation for three years, to the great good of the active members. In 1820, Mr. Claxton went to St. Petersburg, (Russia,) to put up apparatus for making gas, and illuminating one of the governmental offices. He improved the opportunities of visiting the public galleries and gardens. In June, 1823, he left Russia for the United States, and landed in Boston, Massachusetts, studying mathematics on the voyage. In September, 1823, he engaged to work in a machine shop, connected with a cotton factory, in Methuen, Essex county. In his autobiography, Mr. Claxton thus described one of the first, if not the earliest, lyceum established in this county.

In the spring of 1824, however, an opportunity offered itself for me to attempt the formation of a society for mutual improvement. A discourse was delivered in the afternoon of Fast-day, by the clergyman of the village, on the importance of knowledge, and the facility with which it can be obtained, by a judicious arrangement of our time, and by associating together for mutual benefit. In fact, he expressed my views so well, that I felt confident of a kind reception from him; and I accordingly waited on him the same afternoon.

After stating my views, and presenting him some papers on the subject, he informed me that a small society for reading had existed for about five years in the village, but

* This brief memoir is gathered from a useful little volume, entitled, "*Memoir of a Mechanic*," or the Life of Timothy Claxton. Boston: G. W. Light, 1839, pp. 179.

† The London Mechanics' Magazine, for February, 1831, says: "We always thought that it was a fact, beyond all dispute, that the present London Mechanics' Institution was the first establishment of the kind in the British metropolis; but it appears from these documents that, several years before we thought of calling upon the mechanics of London to form an association for cultivating a knowledge of the principles of the arts they practice, some of these mechanics had already done so among themselves, and of their own accord. The institution we allude to was established in August, 1817—about five years before the foundation of the present London Mechanics' Institution—and differing as little from it in name as in character, being called "The Mechanical Institution." In an Introduction to the Code of Laws of this Mechanical Institution, "Printed by J. Mills, Shoe-lane," it is said to have been "established for the purpose of disseminating useful knowledge among its members, and their friends, by attending lectures and discussions on various branches of science."

was at a very low ebb at that time.* He was pleased with my proposals, and invited me to attend the next meeting of the society.

I attended, and found a respectable number of both sexes assembled at the house of one of the members. They were engaged in reading, by turns, from Whelpley's *Compend of General History*; and the president put questions to them, as they proceeded, which made it interesting. At the close of this exercise, he asked me how I liked it. "Very well," was my reply. I then inquired what other exercise they had. He told me that was all, except an annual address, which he delivered himself. I asked him if it would not be well to try the debating of questions, and familiar lectures on science and the arts. He said he thought well of it, but they felt very cautious how they ventured from shore, lest they should get into deep water. I told him I thought they need not be afraid; for I had seen persons engaged in such exercises, whose opportunities for intellectual improvement were inferior to theirs. I was asked if I could give them a lecture. I said I would try; and prepared myself accordingly.

I had brought a small air-pump with me from Russia, which I made of a piece of gas-tubing, with a ground brass plate, on a mahogany stand. I bought a few glass articles, which I ground, to fit the pump-plate, with a little sand and water, on the hearth-stone of my room. I procured a small wash-tub, and fitted a shelf to it, for a pneumatic cistern. In this way, I succeeded, with a very simple apparatus, in explaining the mechanical, and some of the chemical properties of air.

This put new life into the society. Their constitution was revised, to make provision for a library and apparatus. Debating was also introduced with success; and the ladies handed in compositions, which were read at the meetings. The reading exercise was pursued only occasionally. Several of the members were prevailed upon to give lectures on subjects connected with their professions, unless some particular branch of knowledge had been studied by them. It required considerable effort on the part of the more active members to bring those forward who were very diffident. More than one case occurred, however, in which gratitude was felt by those who had thus been roused to action.

I served as vice-president of the society during the remainder of my stay in the town, and took an active part in its exercises.

The society continued to meet at the members' houses, until it became too large to be thus accommodated. They then tried the school-house, and the hall at the tavern; but, not being satisfied with either of these, they built a two-story building for their own accommodation, at an expense of twelve hundred dollars, of which I furnished my full share. The building was completed within two years from the time I was introduced to the society. The hall was let to another society; and there were two mechanics' shops under it.

Since this time, the society has been quite prosperous. The exercises were weekly, in the following order:—1. Reading by all the members; 2. Reading by one member, selected for the purpose; 3. An original lecture; 4. Discussion. This monthly course was continued for one year after the new hall was completed.

In October, 1826, Mr. Claxton removed to Boston, where, in 1829, he engaged in making and selling apparatus for illustrating the various sciences.

After I had been in Boston three or four years, Mr. Josiah Holbrook, a gentleman much engaged in the establishment of lyceums, came to me to see about apparatus, as he was trying to introduce such cheap and simple instruments into schools, and other seminaries of learning, as would come within their means. He had already several articles for illustrating geometry, astronomy, &c.; but air-pumps were not then simplified enough to form a part of the lyceum apparatus. At this interview, I introduced to his notice a small air-pump for exhausting and condensing, and several articles of apparatus to be used with it, which I had made for the amusement of myself and my friends. He frankly acknowledged it to be the very thing that was wanted in the smaller establishments for education. He wished me to make some for sale, and promised to recommend them, which he did not fail to do. From this interview I may date the commencement of my making philosophical instruments as a regular business.

In the summer of 1835, his shop and ware-rooms were destroyed by fire; but, as he was fully insured, he resumed business promptly, taking into partnership his principal workman, Mr. J. M. Wightman, who had been, from the first, his "right-hand man."

* The first meeting of the Methuen Literary Society was held December 7th, 1819, when it was voted to accept a constitution which had been prepared; and the persons present constituted themselves a society, for the purpose of reading and the promotion of useful information, with the title of "The Methuen Social Society for Reading and General Inquiry." A number of useful and interesting works were read by the society, in succession. Not long after the formation of the society, it contained between forty and fifty members, male and female. Afterward, the interest abated, and the number of members diminished. Finally, in the autumn of 1823, there were but four or five regular attendants; and a consultation was held on the subject of dissolving the society.

During this period, Mr. Claxton was active and influential in improving the means of popular education in Boston. He says:—

On my arrival in Boston, my first object was, to make inquiries respecting mechanics' societies; but I was surprised to learn that no society existed to which a mechanic could resort, and hear lectures on subjects calculated to aid him in his vocation. There had been some talk of building a mechanics' hall, &c.; but that project was abandoned. I conversed with several persons on the subject, who were willing to assist in forming a society for mutual improvement. I put a notice in the newspaper, stating where names would be received, and finally called a meeting, which was attended by nine persons; and a second, which was attended by only seven. At this meeting it was determined to make the thing more popular, by advertising it in the daily papers, and hiring a hall in a central situation. The next meeting was held at Concert Hall, and was very well attended. The result was the formation of the Boston Mechanics' Institution. This was in 1826.

The society soon became popular, which induced others to follow the example thus set. Being the first society in Boston that introduced popular lectures on various branches of science, it would seem rather strange that it did not continue longer. I have formed my own ideas as to the causes of its decline. Not the least of these, I should say, was its unsocial character. A course of lectures merely, during the winter, was all that the managers ever attempted: no library, reading-room, nor classes. A class on mechanical science was indeed formed, by members of the institution, with the expectation that the managers would give it encouragement, and own it as a branch of the institution; but they merely appointed a committee to consider the subject, with power to furnish a room for the class. They decided, however, that it was inexpedient; and some of the board thought it wrong to take the funds of the society for the purpose. The class might have supported itself, if persons could have been admitted who were not members of the institution; but the rules of the class forbade it. In fact, the class adhered too closely to the rules of the parent for its own benefit; and was finally discontinued, for want of a little of that fostering care which the managers might have bestowed, with advantage to the parent institution as well as to the class.

The plan of classes in connection with a large institution is better, in some respects, than so many small, independent societies, which are generally of short duration, as the removal of one or two active members is often sufficient to discourage the others, and sometimes to break up the society. The classes, on the other hand, can be filled up, from time to time, as long as they take an interest in the subject; and, when that fails, other classes may be formed, on subjects in which an interest is taken. By the concentration of talent and energy, with the various facilities afforded by a popular institution, the classes can be conducted with more economy, and greater benefit, than can in general be secured by the smaller societies for mutual improvement. Still, I would not depreciate the latter, which will do much good wherever they are carried on with the proper spirit; and there are many places where no other kind will succeed.

Among the many kindred societies that had adopted measures similar to those of this institution, may be named, as its greatest rival, the Massachusetts Charitable Mechanic Association. This was an old and powerful society, with plenty of funds; but the members were very careful how these funds were spent. For a long time, individual members had been trying to introduce something of an improving nature into the society; but, when the lectures were named, there were always a host against any such thing. The following has been related to me, as a specimen of the kind of opposition the liberal members had to contend with:—

A proposition was made for a course of lectures on chemistry; on which a sensible member exclaimed, "What good will chemistry do us? If we want medicine, the cheapest way is to get it at an apothecary's shop." And, strange to say, such remarks, the offspring of very contracted views, had more weight with the majority than anything that could be urged in favor of the proposed measure.

The association remained in this state when the Mechanics' Institution was formed; but the popularity of the latter soon brought the members of the former to their senses, and they actually voted one hundred dollars to a gentleman for a course of twelve lectures, which were delivered simultaneously with the second course given by the institution. From that time, the association has been progressing steadily; and there is some reason to hope that it will do much good in the end; for I have recently been informed that they are going on bravely in the work of improvement. "*Mirabile dictu!*" says my American correspondent, in 1837, "what can you guess has happened—a new comet discovered, caught, and analyzed, or one of the men in the moon fallen off and alighted among us, to prove the moon-story of last summer a hoax? No; not quite equal to that, but quite as improbable. The Mechanic Charitable Association have actually appropriated five thousand dollars, Boston currency, to get up a fair, like the New Yorkers and Philadelphians, next October. This is the consequence of a drubbing given them by their orator, Mr. Homer, at their last triennial celebration."

The Mechanics' Institution commenced on a liberal plan, paying twenty-five dollars for each of their lectures, which were so well attended that a repetition of them was

practiced for some time, when forty dollars were paid for each lecture delivered twice. By such a course, the managers were enabled to procure several good lectures, from regular professors, and to afford encouragement to other gentlemen of talent to prepare themselves. In this way lectures were supplied for several years; and it is to be regretted that they could be no longer kept up. But it is some consolation to those who were the means of setting this intellectual and moral machinery in motion, in the capital of New England, to remember that it was effected by the Boston Mechanics' Institution, in the winter of 1826-7.

In the summer of 1829, I took part in the formation of the Boston Lyceum. I was elected one of its curators; gave several lectures during the two first seasons, and assisted in conducting some of the classes. After that time, my attention to the society was relaxed, in some degree, by the formation of the Boston Mechanics' Lyceum, and my appointment as its president, which office I held from February, 1831, until the termination of the fifth course of exercises, in 1835. These exercises consisted of lectures, debates, declamations, and, occasionally, extemporaneous speaking—that is, speaking on a subject as soon as it is proposed. They were conducted on the mutual instruction principle, by the members alone, who were enabled to pursue this plan to advantage, after being well drilled to it in small classes.

This society has been often referred to, as a specimen of what mechanics and others might do for themselves, by suitable efforts. It has furnished speakers for other societies, engaged in various pursuits; and I might refer to one of the members, who used frequently to speak at temperance and other meetings, with good effect. One evening, I heard it remarked of him that he learned to speak at the Mechanics' Lyceum, which made me feel gratified, especially as this member had expressed a doubt of the success of the lyceum at its formation. I had been speaking encouragingly to the members, when he remarked, "That is all very well, if we can make it go." I devoted some of my best efforts to this society; and we *did* make it go—better, in fact, than many had anticipated.

The members had the privilege of introducing ladies to the exercises, who were permitted to hand in pieces of composition, which were read at the meetings.

In 1832, I was appointed one of the committee of the Franklin Lectures, got up for the benefit of those who were prevented from attending other courses, on account of their expense, and the early hour at which they commenced. These lectures, beginning an hour later, and being afforded at one-fourth of the usual price, (which was accomplished by having most of the lectures gratuitous, and by the ready sale of the tickets, which, in some seasons, amounted to a thousand or more,) gave to the class they were intended to benefit a most valuable opportunity. The duty which I performed was merely that of assisting the committee in their deliberations, and giving an occasional lecture.

In June, 1836, Mr. Claxton left Boston, and visited England. There, his zeal for popular improvement led him to assist in getting up lyceums, and lecturing before mechanics' institutions; and, finally, to an engagement with the Central Society of Education, to superintend the manufacture of school apparatus, similar to what he had been making in Boston.

XIII. THE PUBLIC OR FOUNDATION SCHOOLS OF ENGLAND.

IN place of an article for which we have gathered material in our reading, we subjoin some valuable extracts and statistics from a paper "*On the Foundation Schools of England*," read before the *National Association for the Promotion of Social Science*, in 1857, by Rev. John Day Collis, M. A., head-master of Bromsgrove School, which we shall follow up with interesting and instructive notes from Timbs' "*Sketches of the Progress of Education in England*."

"Where is it that our rising legislators receive their first lesson in cheerful obedience to lawful authority—and I may add, in jealous watchfulness against the excess of lawful authority, or against the growth of tyranny—but in our public schools? Where do they so surely learn to curb their tongues, control their angry passions, conquer their temptation to selfishness, overcome the fear of each other, and learn to speak out boldly in defence of the weak, or in the cause of truth? Where do they acquire habits of self-reliance and manly independence? Where do they learn that submission to lawful discipline is perfect freedom, and that law is a kind though (when they kick against it) a stern master? Where do they learn first to govern themselves, and then to govern others, and so become trained for the onerous duties of magistrates, legislators, instructors of others, as at our public schools? Where do they learn gradually the use of money, the use of time, the responsibility of strength, (mental or bodily,) the responsibility of influence, the necessity for long-sustained and well-regulated exertion? Where do they acquire habits of industry, habits of thoughtfulness, habits of close application, as in the scholastic contests of their boyhood?

Where can be joined such a thorough freedom of play for all that is in a boy of good and noble as in our public schools? Where such a judicious mixture of liberty and restraint? Where is a boy so thrown upon his own good principle and firmness, and yet protected from the rougher and coarser forms of temptation, as in the guarded, and yet free, atmosphere of a public school? When we look at these noble and distinguishing institutions of our country, can we wonder at the Duke of Wellington's watching the boys of Eton in their playing-fields, and thinking that it was there Waterloo was won—that such training as there exists, and has existed for centuries, matures the heroic and manly temper of Englishmen into stern fulfillment of duty, stern defence of the injured and the weak, stern repression of the unjust aggressions of other nations.

Can we wonder at the large share Montalembert gives to the public school-life of English boys in the acknowledged superiority of England?

Can there be a more striking contrast than that which exists between the cramped and confined and constantly-watched training of a foreign school-boy, and the free and healthy play of life and vigor and self-reliance in an English school-boy? Where such results are visible and undeniable, there must be some potent influence at work, to have first established and then maintained it in such vigor for so long a time.

To what can we attribute this traditional training of all our public men, our legislators, our clergy, our barristers and judges, our physicians, our county magistrates, our country gentlemen, but to the fact of the strong impress which our school education—with its wholesome mixture of freedom and restraint, of lessons and games, of internal self-government under the authority of a responsible head—has stamped upon successive generations of Englishmen?

Of the importance which has ever been attached in England to such traditional training we can have no stronger proof than in the great number and variety of our Foundation Schools. Until one looks closely into the matter, it would scarcely be believed how rich England is in such institutions, and their *number* is hardly more surprising than their inherent *vitality*. Years pass on—generations die out, dynasties change, revolutions are accomplished—but, through lapse of time, and change of circumstance, here last these wondrous schools of England: one, like Wantage, claiming, with every appearance of truth, Alfred for its founder; others founded but as yesterday, and gaining success just so far as they keep up with the main traditional type of grammatical training. While so much changes around, "these most English institutions in England," as they have been called by the "*Times*" in a recent review of that racy school-book, "*Tom Brown's School-Days*," "these most English institutions in England" have shown a tenacity of life and a vivaciousness such as could only have resulted from the wise system on which they are conducted, as well as from the wise forethought that founded and endowed them. * * *

A few statistics as to the dates and numbers of our grammar schools may be interesting.

Of course both the invention of printing and the breaking up of the Greek empire, on the capture of Constantinople by the Turks, in 1453, and the consequent spread of the culture of the Greek language in the south and west of Europe, had an immense effect upon education, amongst other ways, in stimulating the foundation of schools; but far beyond these two causes in efficacy must we place the Reformation, with its attendant breaking up of the monastic system. The dissolution of the monasteries gave both an incitement to the foundation of free grammar schools, in order to supply the place of the monastic schools which were thereby broken up, and furnished large pecuniary means for their endowment.

Of schools whose date is ascertained, and which were antecedent to the foundation of Eton College, in the reign of Henry VI., there are but eight—Derby, Huntingdon, Newbury, Ashburton, Wisbeach, Hereford,

Wotton-under-Edge, Sevenoaks, and Winchester College, the date of which is 1887. (Richard II.)

In the reign of Henry VI., Eton was founded, in 1441, and three others, Ewelme and Towcester and the City of London, (revived in 1884.) In the reign of Edward IV., four; Edward V., none; Richard III., only one, and that not due to the king, but to William of Wainfleet, the founder of Magdalen College, Oxford.

In the reign of Henry VII., the tide in favor of the foundation of grammar schools begins to set in rapidly, and goes on with steady increase till the reign of James II., when it as rapidly begins to ebb; and in the reign of William IV. I can find but one, and in the reign of the present queen also but one grammar school, of the old type, and calling itself a grammar school, founded.

In the reign of Henry VII., twelve schools were founded; including those of Reading, Wimborne Minster, and Bridgnorth.

In the reign of Henry VIII., no less than forty-nine were founded; including Manchester, Taunton, Barkhamstead, and Warwick, and the cathedral schools attached to St. Paul's, London, Bristol, Worcester, Ely, Durham, Peterborough, Canterbury, Rochester, Chester, Gloucester, Coventry, and Carlisle.

In the reign of Edward VI., short though it was, the prudent forethought of Cranmer procured or gave the stimulus to the erection of no less than forty-four schools; including those of Norwich, Lichfield, Sherborne, Bury St. Edmunds, Sudbury, Macclesfield, Shrewsbury, Bedford, Birmingham, Leeds, Ludlow, St. Alban's Bath, Southampton, Gigleswick, my own school at Bromsgrove, and, beyond all others in the substantial aid it has given to thousands of parents in the feeding, clothing, and educating of their children, at Christ's Hospital, London.

In the reign of Mary, twelve schools were founded; including those of Ripon and Repton.

Queen Elizabeth carried on vigorously and effectively the educational movement begun by her father, and continued by her brother. Long though her reign was, yet equally long is the list of schools founded during the years she held sway. No less than 115 date from her reign; and among them, Westminster, (1560,) Merchant Taylor's, (1561,) Guernsey, (1568,) Ipswich, (1565,) Richmond, (1567,) Rugby, (1567,) Cheltenham, (1578,) St. Bee's, (1583,) and Uppingham, (1584;) all now effective and flourishing schools, doing large work in the education of this day.

In the reign of James I., forty-eight were founded; including Charterhouse, (1611,) and Dulwich, (1618,) and others of less note.

The disturbances of the reign of Charles I. had their effect in preventing the foundation of schools. Only twenty-eight date from his time, none of any remarkable note at the present day.

In the interval between the death of Charles I. and the Restoration, sixteen were founded.

In the reign of Charles II., thirty-six.

In the reign of James II., only four.

In the reign of William and Mary, seven.

In the reign of Anne, eleven.

In the reign of George I., seventeen.

In the reign of George II., seven.

In the long reign of George III., only twelve.

In 1837, Tavistock.

In 1842, Southampton Diocesan School; and so ends the list, which, commencing with Wantage, in the reign of Alfred, contains 436 schools, 422 of which have sprung into existence in the 435 years that have elapsed since the foundation of Eton College, by Henry VI., in 1441.

There can be no doubt that hundreds of schools existed in the monasteries, and fell with them. This fact will account for the few schools which can date before the Reformation. The desire to supply their place will account for the vast outburst of educational foundation which marks that great epoch. The spoils of the monasteries no doubt, in many schools, especially those of royal foundation, supplied the endowment for the new institutions.

With regard to the future, a long reflection on the subject suggests to the mind the desirableness,

1. Of having (besides the *great* public schools) from two to six thoroughly good grammar schools in each county, so as to place a thoroughly sound classical education, of a high stamp, within the reach of all who require it.

2. The improvement of the smaller endowed schools, so as to afford a good practical middle-class education for the majority, who do not go to the universities; the head-master might teach the few classical pupils wholly, the other master or masters give a good English education, of an enlarged and improved kind, with the elements of Latin, mathematics, and, if required, French.

3. The enlarging of the curriculum of learning in all schools, by introducing such a system of instruction in history, geography, and modern languages, combined with classics, as Dr. Arnold had the boldness to originate at Rugby, and which in twenty years has pervaded all the best schools in the kingdom. The necessity for a modern department has increased of late with the increase of competitive examinations for the public service, the army, India, &c.

4. The charity commissioners ought to be armed with peremptory powers (to be *cheaply* applied) for modifying ancient foundations; not destroying their old character, but adding many new features, called for by the lapse of time and change of circumstances.

5. And, in modifying the endowments, care should be taken to arrange them so that both master and pupil shall be stimulated to exertion thereby, and no pensioning of laziness and inefficiency allowed. To effect this, there is nothing so good as the foundation of scholarships or exhibitions.

6. There ought to be some means of necessitating the retirement, and providing for the support, of superannuated masters of schools."

We give below, mainly from Timbs' "*School Days of Eminent Men*," brief accounts of the principal Endowed Grammar Schools, which enjoy more particularly the reputation of being the PUBLIC SCHOOLS of England.

WILLIAM OF WYKEHAM AND WINCHESTER COLLEGE.

Winchester Grammar or Collegiate School, was founded by William of Wykeham, Bishop of Winchester, in 1378, as a preparatory school to the College which he, about the same time, began to build at Oxford, known as New College,—the two, embracing a perfect course of education from the elements of letters through the whole circle of the sciences. The generous founder was born in the village of Wykeham, in Hampshire, in 1324. By the liberality of Sir Nicholas Uvedale, governor of Winchester Castle, the boy Wykeham was sent to "the Great Grammar-school in Winchester," originally an institution for education founded before the Conquest. Uvedale next presented Wykeham to Edward III. for his skill in architecture. In the short space of four years he was promoted through civil and ecclesiastical grades, to be Bishop of Winchester and Lord High Chancellor. He had already commenced the building of New College at Oxford; and in the following year, with the view of taking the early education of youth out of the hands of the monks, "it was his admirable thought to raise a nursery school, preparatory to his co-operating with a higher course in his college; and thus to raise the standard of education in the country, to that stamp and character which has ever since (through his institution and the copies which were drawn from it,) distinguished the English gentlemen amongst the families of Europe." Thus arose Winchester College, the scholars of which are designated to this day *Wykehamists*. The novelty and merit of the plan were imitated by Chicheley,* at All Souls, Oxford: Henry VI. at Cambridge; and Waynflete at Magdalene. "Twenty years before his hives were built (1378), Wykeham had gathered his swarming bees under temporary roofs, with masters and statutes; which with parental solicitude he watched, altered, and amended from time to time, by his daily experience. So long before his colleges were built was his institution effective." Wykeham died in 1404, at the age of eighty years, with the respect and admiration and gratitude of all; and like the spirit which he had ever sought throughout his amiable life, "length of days were in his right hand, and in his left riches and honor." He is buried in Winchester Cathedral: "beneath the spot where the schoolboy prayed, the honoured prelate sleeps."—(*Walcott*.)

Wykeham's College buildings stand immediately adjoining the main street of Winchester, a city of kindred quiet. The Middle Gate Tower has under three canopied niches, the Angelic Salutation, and the Founder in prayer. This gateway leads to a truly noble quadrangle of Wykeham's architecture. On the left side is the dining-hall, with an oaken roof finely carved with the busts of kings and prelates; and in the centre is a *louvre*, through which the smoke ascended in old times, when the scholars gathered round the hearth to sing and listen to the tales of the chroniclers. Here also plays were acted in the days of the Tudors; the boy-bishop custom was observed as at Eton; and monarchs, prelates, and nobles have been feasted. On the south side of the quadrangle is the chapel, with an oaken roof of fan tracery; the large window, forty feet in height, is

* Chicheley, Archbishop of Canterbury, was a Wykehamist; as was apparently Waynflete, who certainly was master of Wykeham's school in 1422.

filled with painted glass, as are also the side windows. Next are the cloisters, surrounding an area, in the centre of which is the former chapel, now the library. Beyond is the Public School; it was built in 1687 chiefly by subscription among Wykehamists, and is the noblest structure of the kind in the kingdom. Upon the walls are inscribed in Latin the admonitions and rules for the government of the scholars; on the west wall are painted upon a large tablet, a mitre and crozier, the rewards of clerical learning; a pen and inkhorn and a sword, the ensigns of the civil and military professions; and a Winton rod, the dullard's quickener: beneath each symbol is its apt legend: "Aut disce," "Aut discede," "Manet sors tertia cædi."—"Either learn;" "or depart;" "or in the third place be flogged;" underneath is the flogging-place. On the east wall is, a corresponding tablet, bearing the School laws, in Latin. The Chamber walls are carved with the names of many an illustrious Wykehamist; but, the most interesting memorial is the Seventh Chamber and the adjoining passage. This "was the ancient school wherein Waynflete taught, and was called by the founder, '*Magna illa domus*:' the stone 'books' in the embayed windows still remain; it could accommodate scarcely more than ninety boys." At present, the foundation scholars at Winchester are limited to 70; and the commoners are in general about 180. The College and its Grammar School differ little in management from Eton. Among its characteristic customs is the chanting of the Latin song "*Dulce Domum*," to which justice can not be done in any English translation. It is sung in College Hall on the six last Saturdays of the "long half" before "evening bells;" and at the July festival:

Nations, and thrones, and reverend laws, have melted like a dream,
Yet Wykeham's works are green and fresh beside the crystal stream;
Four hundred years and fifty their rolling course have sped,
Since the first serge-clad scholar to Wykeham's feet was led:
And still his seventy faithful boys, in these presumptuous days,
Learn the old truth, speak the old words, tread in the ancient ways:
Still for their daily orisons resounds the matin chime—
Still linked in bands of brotherhood, St. Catherine's steep they climb;
Still to their Sabbath worship they troop by Wykeham's tomb—
Still in the summer twilight sing their sweet song of home.

Roundell Palmer's Anniversary Ballad.

Another eminent Wykehamist, the Rev. Mackenzie Walcott, M. A., has commemorated in his *William of Wykeham and his Colleges*, the glories of Winchester, with an earnest eloquence, and affection for this school of near five centuries, which accompanies the reader through every page of Mr. Walcott's volume. It is delightful to see with what pride the author contemplates "the success of a school, which in its earliest days produced Chicheley and Waynflete, the founders of the two grandest colleges in our ancient universities; the gentle Warham; Grocyn, the reviver of the Greek language; the philosophic Shaftesbury and profound Harris; the moralist, Browne; among poets—some of them distinguished ornaments of the Augustan age—Otway, Young, Collins, Somerville, Phillips, Crowe; the learned Bilson, Burgess, Lowth, and meek Ken; the graceful Wotton; among judges, Erle and Cranworth; among speakers, Onslow, Cornwall, Sidmouth, and Lefevre; among seamen, Keats and Warren; among soldiers, Lord Guildford, Seaton, Dalbiac, Myers, and their gallant companions in the hard-fought fields of the last war. . . . It has never failed in contributing its share of faithful men to serve the country in Church and State; it

has well sustained the reputation which should attach to the only ancient institution not founded by a sovereign which boasts itself to be a royal college."

HENRY THE SIXTH AND ETON COLLEGE.

Henry VI. was born at Windsor, in 1821, and educated by his uncle, Cardinal Beaufort, in all the learning of the age. Hall, the chronicler, when speaking of the causes which led him to found Eton College, and King's College, Cambridge, says of him: "he was of a most liberal mind, and especially to such as loved good learning; and those whom he saw profiting in any virtuous science, he heartily forwarded and embraced." An ingenious writer of our own time has, however, more correctly characterized the young King's motive: "still stronger in Henry's mind was the desire of marking his gratitude to God by founding and endowing some place of pious instruction and Christian worship." Henry seems principally to have followed the magnificent foundations of William of Wykeham at Winchester and Oxford; resolving that the school which he founded should be connected with a college in one of the Universities, whither the best of the foundation scholars of his school should proceed to complete their education, and where a permanent provision should be made for them. Standing upon the north terrace of Windsor Castle, near Wykeham's tower, and looking towards the village of Eton, upon the opposite bank of the silver-winding Thames, we can imagine the association to have first prompted the devout King's design—in the words of the Charter, "to found, erect, and establish, to endure in all future time, a College consisting of and of the number of one provost and ten priests, four clerks and six chorister boys, who are to serve daily there in the celebration of divine worship, and of twenty-five poor and indigent scholars who are to learn grammar; and also of twenty-five poor and infirm men, whose duty it shall be to pray there continually for our health and welfare so long as we live, and for our soul when we shall have departed this life, and for the souls of the illustrious Prince, Henry our father, late King of England and France; also of the Lady Katherine of most noble memory, late his wife, our mother; and for the souls of all our ancestors and of all the faithful who are dead: (consisting) also of one master or teacher in grammar, whose duty it shall be to instruct in the rudiments of grammar the said indigent scholars and all others whatsoever who may come together from any part of our Kingdom of England to the said College, gratuitously and without the exaction of money or any other thing."

The works were commenced in 1441, with the chapel of the College; and to expedite the building, workmen were "pressed" from every part of the realm. The freemasons received 3s. a week each, the stonemasons and carpenters 3s.; plumbers, sawyers, tilers, &c., 6d. a day, and common laborers 4d. The grant of arms expresses this right royal sentiment: "If men are ennobled on account of ancient hereditary wealth, much more is he to be preferred and styled truly noble, who is rich in the treasures of the sciences and wisdom, and is also found diligent in his duty towards God." Henry appointed Waynflete first provost, who, with five fellows of Winchester, and thirty-five of the scholars of that College, became the primitive body of Etonians, in 1443. The works of the chapel were not completed for many years; and the other parts of the College were unfinished until the commencement of Henry the Eighth's reign.

Eton, in its founder's time, was resorted to as a place of education by the

youth of the higher orders, as well as by the class for whose immediate advantage the benefits of the foundation were primarily designed. Those students not on the foundation were lodged at their relations' expense in the town (*oppidum*) of Eton, and thence called *Oppidans*. The scholars on the foundation (since called Collegers) were lodged and boarded in the College-buildings, and at the College expense. There are two quadrangles, built chiefly of red brick: in one are the school and the chapel, with the lodgings for the scholars; the other contains the library, the provost's house, and apartments for the Fellows. The chapel is a stately stone structure, and externally very handsome. The architecture is Late Perpendicular, and a good specimen of the style of Henry the Seventh's reign. In the centre of the first quadrangle is a bronze statue of Henry VI.; and in the chapel another statue, of marble, by John Bacon. The foundation scholars seem to have been first placed in two large chambers on the ground-floor, three of the upper boys in each; they had authority over the others, and were responsible for good conduct being maintained in the dormitory. Subsequently was added "the Long Chamber" as the common dormitory of all the scholars. Dinner and supper were provided daily for all the members of the College; and every scholar received yearly a stated quantity of coarse cloth, probably first made up into clothing, but it has long ceased to be so used.

The King's Scholars or Collegers are distinguished from oppidans by a black cloth gown. The boys dined at eleven, and supped at seven; there being only two usual meals.

King Henry is recorded to have expressed much anxiety for his young incipient Alumni. One of his chaplains relates that "when King Henry met some of the students in Windsor Castle, whither they sometimes used to go to visit the King's servants, whom they knew, on ascertaining who they were, he admonished them to follow the path of virtue, and besides his words would give them money to win over their good-will, saying, 'Be good boys; be gentle and docile, and servants of the Lord.' (*Sitis boni pueri, mites et docibiles, et servi Domini.*)"

The progress of the buildings was greatly checked by the troubles towards the close of the reign of Henry VI.; and his successor, Edward IV., not only deprived Eton of large portions of its endowments, but obtained a bull from Pope Pius II. for disposing of the College, and merging it in the College of St. George at Windsor; but Provost Westbury publicly and solemnly protested against this injustice, the bull was revoked, and many of the endowments were restored, though the College suffered severely. The number on the foundation consisted of a provost and a vice-provost, 6 fellows, 2 chaplains, 10 choristers, the upper and lower master, and the 70 scholars. The buildings were continued during the reign of Henry VII., and the early years of Henry the Eighth, whose death saved Parliament from extinguishing Eton, which was then confirmed to Edward VI.

"Among the Paston Letters is one written in 1467, by 'Master William Paston at Eton, to his Worshipful Brother, John Paston, acknowledging the receipt of 8d. in a letter, to buy a pair of slippers; 18s. 4d. to pay for his board, and thanking him for 12lb. of Figgs and 8lb. of Raisins, which he was expecting by the first barge: he then narrates how he had fallen in love with a young gentlewoman to whom he had been introduced by his hostess, or dame; and he concludes with a specimen of his skill in Latin versification."

A MS. document in Corpus Christi College, Cambridge, shows the general system of the school, the discipline kept up, and the books read in the various forms, about the year 1560. The holidays and customs are also enumerated; great encouragement was then shown to Latin versification, (always the pride of Eton,) and occasionally to English, among the students; care was taken to teach the younger boys to write a good hand. The boys rose at five to the loud call of 'Surgite;' they repeated a prayer in alternate verses, as they dressed themselves, and then made their beds, and each swept the part of the chamber close to his bed. They then went in a row to wash, and then to the school, where the under-master read prayers at six; then the præpositor noted absentees, and one examined the students' faces and hands, and reported any boys that came unwashed. At seven, the tuition began: great attention was paid to Latin composition in prose and verse, and the boys conversed in Latin. Friday seems to have been flogging day. Among the books read by the boys in the two highest forms are mentioned Cæsar's Commentaries, Cicero De Officiis and De Amicitia, Virgil, Lucian, and, what is remarkable, *the Greek Grammar*; a knowledge of Greek at this period being a rare accomplishment even at our universities. Its study was, however, gaining ground in Elizabeth's reign; and in a book published in 1586, it is stated that at Eton, Winchester, and Westminster, boys were then 'well entered in the knowledge of the Latin and Greek tongues and rules of versifying.' Throughout this MS. record is shown the antiquity of making the upper boys responsible for the good conduct of the lower, which has ever been the ruling principle at Eton—in the schools, at meal-times, in the chapel, in the playing-fields, and in the dormitory; and there was a præpositor to look after dirty and slovenly boys.

Of scholars' expenses at Eton early in the reign of Elizabeth, we find a record in the accounts of the sons of Sir William Cavendish, of Chatsworth. Among the items, a breast of mutton is charged tenpence; a small chicken, fourpence; a week's board five shillings each, besides the wood burned in their chamber; to an old woman for sweeping and cleaning the chamber, twopence; mending a shoe, one penny; three candles, ninepence; a book, Esop's Fables, fourpence; two pair of shoes, sixteenpence; two bunches of wax-lights, one penny; the sum total of the payments, including board paid to the bursars of Eton College, living expenses for the two boys and their man, clothes, books, washing, &c., amount to 12*l.* 12*s.* 7*d.* The expense of a scholar at the University in 1514 was but five pounds annually, affording as much accommodation as would now cost sixty pounds, though the accommodation would be far short of that now customary. At Eton, in 1857, the number of scholars exceeded 700.

The College buildings have been from time to time re-edified and enlarged. The Library, besides a curious and valuable collection of books, is rich in Oriental and Egyptian manuscripts, and beautifully illustrated missals. The Upper School Room in the principal court, with its stone arcade beneath, and the apartments attached to it, were built by Sir Christopher Wren, at the expense of Dr. Allstree, provost in the reign of Charles II. We have engraved this school-room from an original sketch; it is adorned with a series of busts of eminent Etonians.

The College Hall interior has been almost entirely rebuilt through the munificence of the Rev. John Wilder, one of the Fellows, and was re-opened in October, 1857: these improvements include a new open-timber roof, a louvre, win-

dows east and west, a gothic oak canopy, and a carved oak gallery over the space dividing the hall from the buttery. The oak panelling around the room is cut all over with the names of Etonians of several generations.

Among the Eton festivals was, the *Montem*, formerly celebrated every third year on Whit-Tuesday, and believed to have been a corruption of the Popish ceremony of the Boy Bishop. It consisted of a theatrical procession of pupils wearing costumes of various periods, for the purpose of collecting money, or "salt," for the captain of Eton, about to retire to King's College, Cambridge. To each contributor was given a small portion of salt, at an eminence named therefrom Salt-Hill; the ceremony concluding with the waving of a flag upon this hill or *Montem*.^{*} Boating and cricket are the leading recreations at Eton: the College walks, or playing-fields, extended to the banks of the Thames, and the whole scene is celebrated by Gray, the accomplished Etonian, in his well-known *Ode on a Distant Prospect of Eton College*, commencing—

"Ye distant spires, ye antique towers
That crown the watery glade."

"Waynflete was the first Provost of Eton. Among the eminent scholars are Archbishop Rotherham, and Bishop West; Croke, the celebrated Hellenist, one of the first who taught the Greek language publicly in any university north of the Alps; Bishop Aldrich, the friend of Erasmus; Hall, the chronicler; Bishop Foxe; Thomas Sutton, founder of the Charterhouse; Sir Thomas Smith, and Sir Henry Savile, provosts; Admiral Sir Humphrey Gilbert; Oughtred, the mathematician; Tusser, the useful old rhymist; Phineas and Giles Fletcher, the poets; the martyrs, Fuller, Glover, Saunders, and Hullier; Sir Henry Wotton, provost; Robert Devereux, third Earl of Essex; Waller, the poet; Robert Boyle; Henry More, the Platonist; Bishops Pearson and Sherlock; the ever-memorable John Hales, 'the Walking Library'; Bishops Barrow and Fleetwood; Lord Camden; the poets Gray, Broome, and West; Fielding, the novelist; Dr. Arne, the musical composer; Horace Walpole; the Marquis of Granby; Sir William Draper; Sir Joseph Banks; Marquis Cornwallis; Lord Howe; Richard Porson, the Greek Emperor; the poets Shelley, Præd and Milman; Hallam, the historian; and W. E. Gladstone, the statesman.

The Premiers of England, during the last century and a half, were mostly educated at Eton. Thus, Lord Bolingbroke, Sir William Wyndham, Sir Robert Walpole, Lord Townshend, Lord Lyttleton, Lord Chatham, the elder Fox, Lord North, Charles James Fox, Mr. Wyndham, the Marquis Wellesley, Lord Grenville, Canning, the Duke of Wellington, Lord Grey, and the Earl of Derby—were all Etonians.

Among the celebrities of the College should not be forgotten the periodical work entitled *The Etonian*, the contributors to which were Eton scholars, and the author-publisher was the Etonian Charles Knight—a name long to be remembered in the commonwealth of English literature."

King's College, which Henry founded in 1441, at Cambridge, to be recruited from Eton, is the richest endowed collegiate foundation in that University.

^{*} The last *Montem* was celebrated at Whitsuntide, 1844. The abolition of the custom had long been pressed upon the College authorities, and they at length yielded to the growing condemnation of the ceremony as an exhibition unworthy of the present enlightened age. A memorial of the last celebration is preserved in that picturesque chronicle of events, the *Illustrated London News*, June 1, 1844.



WINCHESTER COLLEGE SCHOOL.



ETON SCHOOL.—The Upper School.



SAINT PAUL'S SCHOOL, London.



CHRIST'S HOSPITAL, London.—The Writing School.

DEAN COLET AND SAINT PAUL'S SCHOOL.

JOHN COLET, D. D., Dean of the Cathedral Church of St. Paul in London, was born in that city in 1466, the eldest son of Sir John Colet, twice mayor. In 1488, he was sent to Magdalen College, Oxford, where he passed seven years, and took the usual degrees in arts. Here he studied Latin, with some of the Greek authors through a Latin medium, and mathematics. Having thus laid a good foundation for learning at home, he traveled in France and Italy from 1493 to 1497; he had previously been preferred to the rectory of Dennington, in Suffolk, being then in acolyth's orders. At Paris, Colet became acquainted with the scholar Budæus, and was afterwards introduced to Erasmus. In Italy he contracted a friendship with Grocyn, Linacre, Lilly, and Latimer, all of whom were studying the Greek language, then but little known in England. Whilst abroad, he devoted himself to divinity, and the study of the civil and canon law. Colet returned to England in 1497, and subsequently rose through various degrees of preferment to be Dean of St. Paul's. By his lectures, and other means, he greatly assisted the spirit of inquiry into the Holy Scriptures which eventually produced the Reformation. He had, however, many difficulties to contend with; and tired with trouble and persecution, he withdrew from the world, resolving, in the midst of life and health, to consecrate his fortune to some lasting benefaction, which he performed in the foundation of St. Paul's School, at the east end of St. Paul's churchyard, in 1512; and, "it is hard to say whether he left better lands for the maintenance of his school, or wiser laws for the government thereof."—(*According to Fuller*).

The original school-house, built 1508-12, was destroyed in the Great Fire of 1666, but was rebuilt by Wren. This second school was taken down in 1824, and the present school built of stone from the designs of George Smith: it has a handsome central portico upon a rusticated base, projecting over the street pavement. The original endowment, and for several years the only endowment of the school, was 55*l.* 14*s.* 10*d.*, the annual rents of estates in Buckinghamshire, which now produce 1858*l.* 16*s.* 10*d.* a-year; and, with other property, make the present income of the school upwards of 5000*l.* Lilly, the eminent grammarian, the friend of Erasmus and Sir Thomas More, was the first master of St. Paul's, and "Lilly's Grammar" is used to this day in the school; the English rudiments were written by Colet, the preface to the first edition probably by Cardinal Wolsey; the Latin syntax chiefly by Erasmus, and the remainder by Lilly: thus, the book may have been the joint production of four of the greatest scholars of the age. Colet directed that the children should not use tallow but wax candles in the school; fourpence entrance-money was to be given to the poor scholar who swept the school; and the masters were to have livery gowns, "delivered in clothe."

Colet died in his 53rd year, in 1519. He wrote several works in Latin; the grammar which he composed for his school was called "Paul's Accidence." The original Statutes of the school, signed by Dean Colet, were, many years since, accidentally picked up at a bookseller's, and by the finder presented to the British Museum. The school is for 153 boys "of every nation, country, and class:" the 153 alluding to the number of fishes taken by St. Peter (*John*, xxi. 2). The education is entirely classical; the presentations to the school are in the gift of the Master of the Mercers' Company; and scholars are admitted at fifteen, but eligible at any age after that. Their only expense is for books and

wax tapers. There are several valuable exhibitions, decided at the Apposition, held in the first three days of the fourth week after Easter, when a commemorative oration is delivered by the senior boy, and prizes are presented from the governors. In the time of the founder, the "Apposition dinner" was "an assembly and a littell dinner, ordayned by the surveyor, not exceedyng the pryce of four nobles."

In the list of eminent Paulines (as the scholars are called), are, Sir Anthony Denny and Sir William Paget, privy counsellors to Henry VIII.; John Leland, the antiquary; John Milton, our great epic and poet; Samuel Pepys, the diarist; John Strype, the ecclesiastical historian; Dr. Calamy, the High Churchman; the Great Duke of Marlborough; R. W. Elliston, the comedian; Sir C. Mansfield Clarke, Bart.; Lord Chancellor Truro, &c.

EDWARD VI. AND CHRIST'S HOSPITAL.

THE most munificent patron of education who ever sat upon the British throne was Edward VI., the only son of Henry VIII. who survived him. He was born at Hampton Court in 1537, on the 12th of October, which being the vigil of St. Edward, he received his Christian appellation in commemoration of the canonized king. His mother, Queen Jane Seymour, died on the 12th day after giving him birth. The child had three step-mothers in succession after this; but he was probably not much an object of attention with either of them. Sir John Hayward, who has written the history of his life and reign with great fullness, says that he "was brought up among nurses until he arrived at the age of six years. He was then committed to the care of Dr. (afterwards Sir Anthony) Cook, and Mr. (afterwards Sir John) Cheke, the former of whom appears to have undertaken the prince's instruction in philosophy and divinity, the latter in Greek and Latin." He succeeded to the throne when little more than nine years of age. The conduct of the young prince towards his instructors was uniformly courteous; and his generous disposition won for him the highest esteem. In common with the children of the rich and great, he was from his cradle surrounded with means of amusement. It is related that at the age of five years, a splendid present was made to him by his godfather, Archbishop Cranmer; the gift was a costly service of silver, consisting of dishes, plates, spoons, &c. The child was overjoyed with the present, when the prince's valet, seeking to impress on his mind its value, observed: "Your highness will be pleased to remember that although this beautiful present is yours, it must be kept entirely to yourself; for if others are permitted to touch it, it will be entirely spoiled." "My good Hinbrook," replied the prince, mildly, "if no one can touch these valuables without spoiling them, how do you then suppose they would ever have been given to me?" Next day, Edward invited a party of young friends to a feast, which was served upon the present of plate; and upon the departure of the young guests, he gave to each of them an article of the service, as a mark of regard.

Cranmer, to encourage Edward in his studies, was in the habit of corresponding with him once a week, and requiring of him an account of what he had done during that time. The prince also complied with the request of his venerable godfather, by keeping a journal, for which purpose he divided a sheet of paper into five columns, and under that arrangement recorded his progress in mythology, history, geography, mathematics, and philosophy.

At the age of fifteen, Edward is said to have possessed a critical knowledge of the Greek and Latin languages; and to have conversed fluently in French, Spanish, and Italian. A manuscript is still preserved in the British Museum, containing a collection of his exercises in Greek and Latin; several of his letters, in French and Latin, written with singular accuracy of diction, are also extant; and when to his other accomplishments it is added that he was well versed in natural philosophy, astronomy, and logic, his acquirements will be allowed to have been extraordinary. "This child," says Carden, the celebrated physician, who had frequently conversed with Edward, "was so bred, had such parts, was of such expectation, that he looked like a miracle of a man; and in him was such an attempt of Nature, that not only England, but the world, had reason to lament his being so early snatched away."

Few events in the history of Christian benevolence are so minutely recorded as the foundation of Christ's Hospital. At the same time, Edward founded St. Thomas's and Bridewell Hospitals; the three foundations forming part of a comprehensive scheme of charity, resulting from a sermon preached before the King by the pious Bishop Ridley, at Westminster, in 1552. The Bishop, discoursing on the excellence of charity, "made a fruitful and goodly exhortation to the rich to be merciful unto the poor, and also to move such as were in authority, to travail by some charitable ways and means, to comfort and relieve them." Edward's heart was touched by the earnestness of the appeal, and "understanding that a great number of poor people did swarm in this realm, and chiefly in the city of London, and that no good order was taken of them," he sent the Bishop a message when the sermon was ended, desiring him not to depart till he had spoken with him. As soon as he was at leisure, he took him aside into a private gallery, where he made him sit down, and be covered; and giving him hearty thanks for his sermon, entered into conversation on several points, which, according to his usual practice, he had noted down for special consideration. Of this interview, the venerable Ridley remarked: "Truly, truly, I could never have thought that excellency to have been in his grace, but that I beheld and heard it in him."

Adverting, at length, to the Bishop's exhortation in behalf of the poor, Edward greatly commended it, and it had evidently made a powerful impression upon his mind. He then acknowledged the application of Ridley's exhortation to himself, and prayed the Bishop to say his mind as to what ways were best to be taken. Ridley hesitated for a moment to reply. At length, he observed that the city of London, as well on account of the extreme poverty which prevailed there on the one hand, and of the wise and charitable disposition of its more wealthy inhabitants on the other, would afford a favorable opening for the exercise of the royal bounty; and advised that letters should be forthwith directed to the Lord Mayor, requiring him, with such assistants as he might think meet, to consult upon the matter. Edward wrote the letter upon the instant, and charged Ridley to deliver it himself; and his delight was manifested in the zeal with which he undertook the commission, for the King's letter and message were delivered on the same evening. On the following day Ridley dined with the Lord Mayor, who, with two Aldermen and six Commoners, took the King's proposal into consideration; other councillors were added, and at length the plan recommended to his Majesty was to provide Christ's Hospital for the education of poor children; St. Thomas's, for the relief of the sick and

diseased; and Bridewell, for the correction and amendment of the idle and the vagabond.

For Christ's Hospital was granted the monastery of the Grey Friars; the King also presenting the foundation with a considerable stock of linen, which the commissioners, who had lately been appointed to inspect the churches in and about the metropolis, had deemed superfluous for the performance of divine service, as celebrated since the Reformation. For the second hospital, an almonry was fitted up; and for the third hospital, Edward granted his royal palace of Bridewell. He then bestowed certain lands for the support of these foundations; and having signed the instrument, ejaculated in the hearing of his Council—"Lord, I yield thee most hearty thanks, that thou hast given me life this long, to finish this work to the glory of thy name."

"A large picture, (attributed to Holbein,) which hangs in the Great Hall of Christ's Hospital, portrays this interesting scene. The young monarch sits on an elevated throne, in a scarlet and ermined robe, holding the sceptre in his left hand, and presenting with the other the Charter to the kneeling Lord Mayor. By his side stands the Chancellor holding the seals, and next to him are other officers of State. Bishop Ridley kneels before him with uplifted hands, as if supplicating a blessing on the event; whilst the Aldermen, &c., with the Lord Mayor, kneel on both sides, occupying the middle ground of the picture; and lastly, in front, are a double row of boys on one side, and girls on the other, from the master and matron down to the boy and girl who have stepped forward from their respective rows, and kneel with raised hands before the King."

Edward lived about a month after signing the Charter of Incorporation of the Royal Hospitals: in the spring of 1552 he had been seized with the small-pox, when he had scarcely recovered from the measles; a consumptive cough came on; his medical advisors were dismissed, and his cure entrusted to the ignorant empiricisms of an old nurse; this disorder was greatly aggravated, and he died in the arms of Sir Henry Sidney, on the 6th July, 1553, in the sixteenth year of his age, praying God to receive his spirit, and to defend the realm from poplstry.

The Old Grey Friars buildings adjoining Newgate-street were now repaired by aid of the citizens' benefactions, and in November, 1552, there were admitted 340 "poore fatherlesse children" within the ancient monastery walls. "On Christmas-day," says Stow, "while the Lord Maior and Aldermen rode to Paul's, the children of Christ's Hospitall stood from St. Lawrence-lane end in Cheape towards Paul's, all in one livery of russet cotton, 340 in number; and at Easter next they were in *blue*, at the Spittle, and so have continued ever since." Hence the popular name of the Hospital, "the Blue-Coat School."

Since this period, the income of the institution has known much fluctuation; and consequently, the number of inmates. The 340 children with which the Hospital opened had dwindled in 1580 to 150. The object of the institution has also, in the lapse of time, become materially changed, which may in a great measure be attributed to the influence of the Governors, or benefactors, its chief supporters.

The Hospital, with the church of the monastery, was destroyed by the Great Fire, but was soon rebuilt. Later was added the Mathematical School, founded by Charles II., in 1672, for 40 boys, to be instructed in navigation; they are

called "King's Boys," and wear a badge on the right shoulder; and there was subsequently added, by the legacy of a Governor, a subordinate Mathematical School of 12 boys ("The Twelves"), who wear a badge on the left shoulder; and lastly, to these have been added "The Twos."

This was the first considerable extension of the system of education at the Hospital, which originally consisted of a grammar-school for boys, and a separate school for girls, the latter being taught to read, sew, and mark. A book is preserved containing the records of the Hospital from its foundation, and the anthem sung by the first children.

Of the school buildings, we engrave the interior of the Writing School; a large edifice built by Sir Christopher Wren, in 1694, at the expense of Sir John Moore, of whom a marble statue is placed in the façade. Of the ancient Friary—portions of the cloisters only remain. The great Dining Hall was commenced in 1825, and is built partly on the ancient wall of London, and partly on the foundation of the refectory of the monastery. It is a vast edifice in the Tudor style, by Shaw, the principal front facing Newgate-street, with the enclosed play-ground; the Hall, with its lobby and organ gallery, is 178 feet long: it is lit by nine large windows, and is, next to Westminster Hall, the noblest room in the metropolis. Here besides the large Charter picture, already described, is a painting by Verrio, of James II. on his throne, receiving "the Mathematical Boys," in the same form as at their annual presentation to this day; though in Verrio's picture are girls as well as boys.

"In this Hall are held the "Suppings in Public," on the seven Sunday evenings preceding Easter Sunday, and on that evening, to which visitors are admitted by tickets. The tables are laid with cheese in wooden bowls; beer in wooden piggins, poured from leathern jacks; and bread brought in huge baskets. The official company then enter, the Lord Mayor or President taking his seat in a chair made of oak from old St. Katherine's Church; a hymn is sung, accompanied by the organ; a Grecian reads the evening service from the pulpit, silence being enforced by three strokes of a hammer. After prayers, the meal commences, the visitors walking between the tables. At its close, the "trade boys" take up the piggins and jacks, baskets, bowls, and candlesticks, and pass in procession before the authorities, bowing to them; the entire 800 boys thus passing out.

"The Spital (or Hospital) Sermons are preached in Christchurch, Newgate-street, on Easter Monday and Tuesday. On Monday, the children proceed to the Mansion House, and return in procession to Christchurch with the Lord Mayor and City authorities, to hear the sermon. On Tuesday, the children again go to the Mansion House, and pass through the Egyptian Hall before the Lord Mayor, each boy receiving a glass of wine, two buns, and a shilling; the monitors half-a-crown each, and the Grecians a guinea. They then return to Christchurch, as on Monday."

At the first Drawing-room of the year, forty "Mathematical Boys" are presented to the Sovereign, who gives them 8*l.* 8*s.* as a gratuity. To this, other members of the Royal Family formerly added smaller sums, and the whole was divided among the ten boys who left the school in the year. On the illness of King George III. these presentations were discontinued; but the Governors of the Hospital continued to pay 1*l.* 8*s.*, the amount ordinarily received by each,

to every boy on quitting. The practice of receiving the children was revived by William IV.

Each of the "Mathematical Boys" having passed his Trinity-House examination and received testimonials of his good conduct, is presented with a watch, worth from 9*l.* to 13*l.*, in addition to an outfit of clothes, books, mathematical instruments, a Gunter's scale, a quadrant, and sea-chest. On St. Matthew's Day, (Sept. 21,) "the Grecians" deliver orations, this being a relic of the scholars' disputations in the cloisters.

The dress of the Blue-Coat Boys is the costume of the citizens of London at the time of the foundation of the Hospital, when blue coats were the common habit of the apprentices and serving-men, and yellow stockings were generally worn. This dress is the nearest approach to the monkish costume now worn; the dark-blue coat with a closely-fitting body and loose sleeves, being the ancient tunic, and the under-coat or "yellow," the sleeveless under-tunic of the monastery. The red leathern girdle corresponds to the hempen cord of the friar. Yellow worsted stockings, a flat black woollen cap, (scarcely larger than a saucer,) and a clerical neckband, complete the dress.

"The education of the boys consists of reading, writing, and arithmetic, French, the classics, and the mathematics. There are sixteen Exhibitions for scholars at the Universities of Oxford and Cambridge, &c. There are also separate trusts held by the Governors of the Hospital, which are distributed to poor widows, to the blind, and in apprenticing boys, &c. The annual income of the Hospital is about 56,000*l.*; its ordinary disbursements 48,000*l.*"

Among the eminent *Blues* are Leigh Hunt; Thomas Barnes, many years editor of the *Times* newspaper; Thomas Mitchell, the translator of *Aristophanes*; S. T. Coleridge, the poet, and Charles Lamb, his contemporary; Middleton, Bishop of Calcutta; Jeremiah Markland, the best scholar and critic of the last century; Samuel Richardson, the novelist; Joshua Barnes, the scholiast; Bishop Stillingfleet; Camden, "the nourrice of antiquitie;" and Campion, the learned Jesuit of the age of Elizabeth. Coleridge, Charles Lamb, and Leigh Hunt have published many interesting reminiscences of their contemporaries in the school.

"The subordinate establishment is at Hertford, to which the younger boys are sent preparatory to their entering on the foundation in London. At Hertford there is likewise accommodation for 80 girls.

"Besides the Lord Mayor, Court of Aldermen, and twelve members of the Common Council, who are Governors *ex officio*, there are between 400 and 500 other Governors, at the head of whom are the Queen and Prince Albert, with the Prince of Wales and Prince Alfred. The Duke of Cambridge is President. The qualification for Governor is a donation of 500*l.*; an Alderman may nominate a Governor for election at half-price. There are from 1400 to 1500 children on the foundation, including those at the branch establishment at Hertford. About 200 boys are admitted annually, (at the age of from seven to ten years,) by presentations of the Governors; the Queen, the Lord Mayor (two presentations,) and the Court of Aldermen, presenting annually, and the other Governors in rotation, so that the privilege occurs about once in three or four years. A list of the Governors having presentations is published annually in March, and is to be had at the counting-house of the Hospital. 'Grecians' and 'King's Boys,' remain in the school after they are fifteen years old; but the other boys leave at that age."

WESTMINSTER SCHOOL.

It is one of the unfading glories of ancient Westminster that it has been a seat of learning since the time when it was a "thorny island," and at least eight centuries since was rebuilt the Abbey Church "to the honour of God and St. Peter." The queen of the Confessor is related to have played with a Westminster scholar in grammar, verses, and logic, as she met him in his way from the monastery school to the palace, as related by the chronicler with all the circumstantial minuteness of the account of a royal visit of yesterday. Equally direct is the evidence that from the latter part of the reign of Edward III., down to the dissolution of the Abbey, a salary was paid to a schoolmaster, styled "*Magister Scholarum pro eruditione puerorum grammaticorum*," who was distinguished from the person who taught the children of the choir to sing.

The earliest school was thus an appurtenance of the monastery; and is included in the draft (in the archives of the Chapter,) of the new establishment for the See of Westminster.

During the reign of Queen Mary, Cardinal Pole appears to have suffered the school to languish wholly unsupported. Her successor enforced the right of election to studentships, restored the revenues, and the foundation of an Upper and Lower Master and forty scholars, and gave the present statutes, whence Elizabeth has received the honorable title of Foundress. This Queen added an important statute to regulate the mode of election of novitiates into St. Peter's College. Evelyn has recorded one of these examinations:—

"In 1661, May 13, I heard and saw such exercises at the election of scholars at Westminster School to be sent to the University, in Latin, Greek, Hebrew, and Arabic, in themes and extemporary verses, with such readiness and will as wonderfully astonished me in such youths."

Dean Goodman was the next benefactor, in obtaining a perpetual grant of his prebend of Chiswick, to be a place of refuge for the members of the Chapter and College whenever pestilence might be desolating Westminster. During this Deanship, the scholars were lodged in one spacious chamber, their commons were regulated, and the apartments of the Masters received an increase of comfort and accommodation. Among the earliest grants is a perpetual annuity of twenty marks, made in 1594, by Cecil, Lord High Treasurer, to be presented as gifts to scholars elected to either of the Universities.

Before the middle of the reign of Elizabeth, the rudiments of the Greek language were taught to boys at Westminster School; and Harrison, in his preface to Holinshed, about 1586, states that the boys of the three great collegiate schools (Winchester, Eton, and Westminster,) were "well entered in the knowledge of the Latin and Greek tongues and rules of versifying."

Dean Goodman had for his successor that man of prayer and "most rare preacher," Dr. Launcelot Andrewes, who would often supply the place of the Masters for a week together. It was one of his simple pleasures, "with a sweetness and compliance with the recreations of youth," always to be attended, in his little retirements to the cheerful village of Chiswick, by two of his scholars; and often thrice in the week, it is said, he assembled about him in his study those of the Upper Form; and the earnest little circle frequently through the whole evening, with reverential attention heard his exposition of the Sacred Text; while he also pointed out to them those sources of knowledge in Greek

and Latin, from which he had gathered his own stores of varied learning.—*Walcott's Memorials of Westminster*.

Once more evil days fell upon the rising school. The Abbey was desecrated, and the families of the scholars were threatened or assailed by the horrors of the Great Rebellion, when Parliament, having for about four years exercised power over the School through a Committee, in 1649 assumed a protectorate, entrusting the management of the School to a government of fifty members established in the Deanery. The fee or inheritance of many of the Abbey estates was sold; old rents only being reserved to the College. This control lasted until the Restoration in 1660; since which period the scholars have been maintained by the common revenues of the Collegiate Church, at a cost of about 1200*l.* a year.

The Queen's Scholars wear caps and gowns; and there are four "Bishop's Boys" educated free, who wear purple gowns, and have 60*l.* annually amongst them. Besides this *foundation*, a great number of sons of the nobility and gentry are educated here. Of the Queen's Scholars an examination takes place in Rogation week, when four are elected to Trinity College, Cambridge, and four to Christchurch, Oxford; scholarships of about 60*l.* a year.

The scholars from the fourth, fifth, and Sixth Forms "stand out" in Latin, Greek, and grammatical questionings, on the Wednesday before Ascension Day, in the presence of the Head Master, who presides as umpire, when the successful competitors being chosen to fill the vacancies, "the Captain of the Election" is chaired round Dean's Yard, or the school court. On Rogation Tuesday, a dinner is given to the electors, and all persons connected with the School, by the Dean and Chapter; and any old Westminster scholar of sufficient rank or standing is entitled to attend it. After dinner, epigrams are spoken by a large proportion of the Queen's Scholars. There are several funds available to needy scholars; and the whole foundation and school is managed by the Dean and Chapter of Westminster.

The school buildings are in part ancient. You enter the School court from the Broad Sanctuary, through an archway in a block of houses of mediæval architecture. The porch of the School is stated to have been designed by Inigo Jones. On the north front is the racket-court, formed against part of the west wall of the dormitory. The venerable School itself, once the dormitory of the monks, ranges behind the eastern cloister of the Abbey. It is a long and spacious building, with a semicircular recess at one end, the Head Master's table standing in front of it; four tiers of forms, one above the other, are ranged along the eastern and western walls; and the room has a massive open-timber roof of chestnut. The Upper and Lower Schools are divided by a bar, which formerly bore a curtain: over this bar on Shrove Tuesday, at eleven o'clock, the College cook, attended by a verger, having made his obeisance to the Masters, proceeds to toss a pancake into the Upper School, once a warning to proceed to dinner in the Hall.*

* An interesting tradition is attached to the bar at the time it bore a curtain. Two boys at play, by chance made a grievous rent in the pendent drapery; and one of the delinquents suffered his generous companion to bear the penalty of the offence—a severe flogging. Long years went by; the Civil War had parted chief friends; and the boys had grown up to manhood, unknown to each other. One of them, now become a Judge and sturdy Republican, was presiding at the trial of some captive cavaliers, and was ready to upbraid and sentence them, when he recognized in the

The School is fraught with pious memories. Here "that sweet singer of the Temple, George Herbert," was reared; and that love of choral music, which "was his heaven upon earth," was, no doubt, implanted here, while he went up to pray in the glorious Abbey. And it was here that South, in his loyal childhood, reader of the Latin prayers for the morning, publicly prayed for Charles I. by name, "but an hour or two at most before his sacred head was struck off." Nor can we forget among the ushers, the melody of whose Latin poems had led him to be called "Sweet Vinny Bourne;" or the mastership of Busby, who boasted his rod to be the sieve to prove good scholars, and walked with covered head before Charles II.; then humbly at the gate assured his Majesty that it was necessary for his dignity before his boys to be the greatest man there, even though a king were present. How successfully, too, is Busby commemorated in the whole-length portrait of the great school-master standing beside his favorite pupil, Spratt. Upon the walls are inscribed many great names; and in the library is preserved part of the form on which Dryden once sat, and on which his autograph is out.

In the *Census Alumnorum*, or list of *foundation* scholars, are Bishops Overall and Ravis, translators of the Bible; Hakluyt, collector of Voyages; Gunter, inventor of the Scale; "Master George Herbert;" the poets Cowley and Dryden; South; Locke; Bishops Atterbury, Spratt, and Pearce; the poet Prior, and Stepney the statesman; Rowe and "Sweet Vinny Bourne," the poets; Churchill, the satirist; Warren Hastings; Everard Home, surgeon; Dr. Drury, of Harrow School, &c. Among the other eminent persons educated here are Lord Burleigh; Ben Jonson; Nat Lee; Sir Christopher Wren; Jasper Mayne, the poet; Barton Booth, the actor; Blackmore, Browne, Dyer, Hammond, Aaron Hill, Cowper, and Southey, the poets; Horne Tooke; Gibbon, the historian; Cumberland, the dramatist; Colman the Younger; Sir Francis Burdett; Harcourt, Archbishop of York; the Marquis of Lansdowne; Lord John Russell; the Marquis of Anglesey; Sir John Cam Hobhouse (Lord Broughton); George Bidder, of calculating fame, now the eminent civil engineer.

Among the eminent Masters are Camden, "the Pausanias of England," who had Ben Jonson for a scholar; and Dr. Busby, who had Dryden, and who, out of the bench of bishops, taught sixteen.

The College Hall, originally the Abbot's refectory, was built by Abbot Litlington, *temp.* Edward III.: the floor is paved with chequered Turkish marble; at the south end is a musician's gallery, now used as a pantry, and behind are bathtubs and hatches; at the north side, upon a dais, is the high table; those below, of chestnut-wood, are said to have been formed out of the wreck of the Armada. The roof-timbers spring from carved corbels, with angels bearing shields of the Confessor's and Abbot's arms; and a small *louvre* rises above the central hearth, upon which in winter a wood and charcoal fire used to burn until the year 1850.* The Library is a modern Italian room, and contains several

worn features of one grey-haired veteran, the well-remembered look of the gallant boy who had once borne punishment for him. By certain answers, which in the examination he elicited, his suspicions were confirmed; and with an immediate resolve, he posted to London, where, by his influence with Oliver Cromwell, he succeeded in preserving his early friend from the scaffold.—Walcott's *Memoirs of Westminster*.

* Fires continued to be made on a hearth in the middle of the hall called the *reduced*, in many college halls in Oxford and Cambridge, until about the year 1820.

memorials of the attachment of "Westminsters." The old dormitory, built in 1380, was the granary of the monastery; and was replaced by the present dormitory in 1722, from the designs of the Earl of Burlington: its walls are thickly inscribed with names. Here Latin plays are represented upon the second Thursday in December, and the Monday before and after that day. These performances superseded the old Mysteries and Moralities in the reign of Queen Mary, when the boy actors were chiefly the acolytes, who served at mass. Warton mentions that this "liberal exercise is yet preserved, and in the spirit of true classical purity, at the College of Westminster." Garrick designed scenery for these pieces; but the modern dresses formerly used were not exchanged for Greek costume until 1839. The plays acted of late years have been the *Andria*, *Phormio*, *Eunuchus*, and *Adelphi*, of Terence, with Latin prologue and epilogue pleasantly reflecting in their humor events of the day. Two new scenes were drawn for the theatre, in 1857, by Professor Cockerell, R. A.

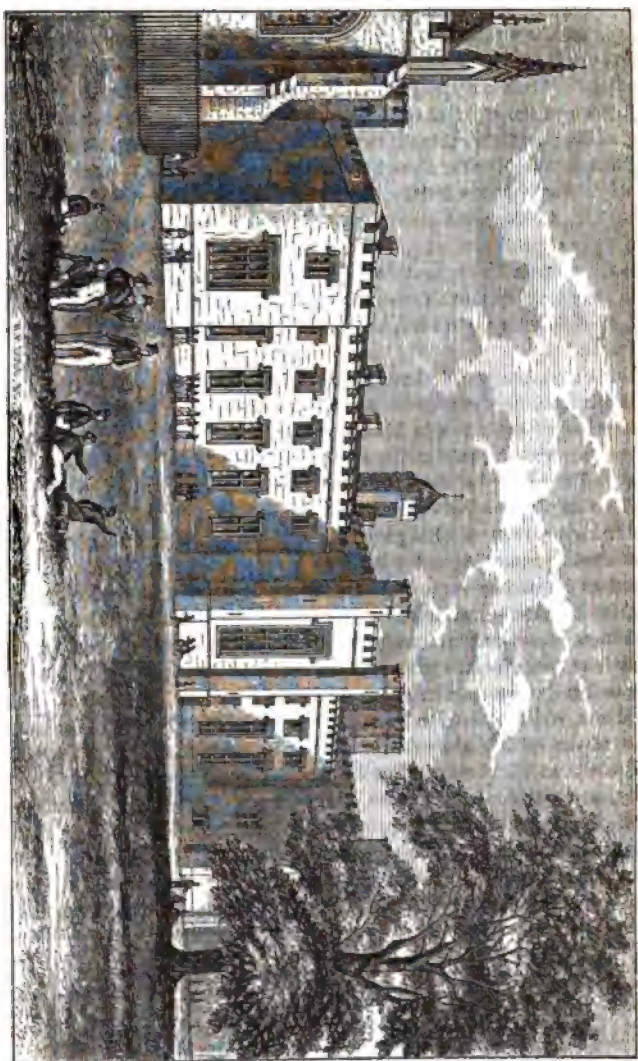
Boating is a favorite recreation of the Westminsters, who have often contested the championship of the Thames with Eton. On May 4, 1837, the Westminsters won a match at Eton; when, by desire of William IV., the victors visited Windsor Castle, and were there received by the good-natured king.

RUGBY SCHOOL.

Rugby Grammar School was founded by Lawrence Sheriff, a native of Rugby, who had accumulated a large fortune in dealing with the fruits and spices of the West Indies. He was warden of the Grocers' Company in 1566; and in Fox's Book of Martyrs he is spoken of as "servant to the Lady Elizabeth, and sworn unto her Grace," which seems to imply that he was "grocer to the Queen:" he kept shop "near to Newgate Market." Sheriff died in 1567, and by his last will, made seven weeks previously, bequeathed a third of his Middlesex estate to the foundation of "a fair and convenient schoolhouse, and to the maintaining of an honest, discreet, and learned man to teach grammar;" the rents of that third, which then amounted to 8*l.* annually, had swelled in 1825 to above 5500*l.*

Immediately upon the founder's death, the school was commenced in a building in the rear of the house assigned for the master; it consisted of one large room, having no playground attached. The first page of the school register, commencing in 1675, shows that of the 26 entrances in that year, 12 were boys not upon the foundation, and one of them came even from Cumberland. The school now took a higher stamp; and early in the list we find the Earls of Stamford and Peterborough, the Lords Craven, Griffin, Stawell, and Ward, the younger sons of the houses of Cecil and Greville, and many of the baronets of the adjacent counties.

The school buildings were from time to time enlarged; until the improved value of the endowment enabled the trustees to commence, in 1809, the present structure, designed by Hakewill, in the Elizabethan style, and built nearly upon the same spot as the first humble dwelling. The buildings consist of cloisters on three sides of a court; the Great School, and the French and Writing Schools; the dining halls, and the chapel; and the master's house, where and in the town the boys are lodged. The group of buildings cost 35,000*l.*, but are of "poor sham Gothic." A library has since been added. The only former playground was the churchyard; but Rugby has now its bowling-green close, with its tall



RUGBY GRAMMAR SCHOOL.

spiral elms; and its playground, where cricket and foot-ball are followed out-of-doors with no less zest and delight than literature is pursued within.*

The instruction at Rugby retains the leading characteristics of the old school, being based on a thoroughly grounded study of Greek and Latin. But the treatment has been much improved: formerly the boys were ill-used, half imprisoned, and put on the smallest rations, a plentiful allowance of rod excepted; and a grim tower is pointed out in which a late pedagogue, Dr. Wooll, was accustomed to inflict the birch unsparingly. Nevertheless, in Wooll's time were added six exhibitions to the eight already instituted; books were first given as prizes for composition; and the successful candidates recited their poems before the trustees, thus establishing the Speeches.

To Dr. Wooll† succeeded Dr. Thomas Arnold, the second and moral founder of Rugby. Of the great change which he introduced in the face of education here, we can speak but in brief. Soon after he had entered upon his office, he made this memorable declaration upon the expulsion of some incorrigible pupils: "It is not necessary that this should be a school of three hundred, or one hundred, or of fifty boys; but it is necessary that it should be a school of Christian gentlemen."

The three ends at which Arnold aimed were—first, to inculcate religious and moral principle, then gentlemanly conduct, and lastly, intellectual ability. One of his principal holds was in his boy sermons, that is, in sermons to which the young congregation could and did listen, and of which he was the absolute inventor. The feelings of love, reverence, and confidence which he inspired, led his pupils to place implicit trust on his decision, and to esteem his approbation as their highest reward. His government of the school was no reign of terror: he resorted to reasoning and talking as his first step, which failing, he applied the rod as his *ultima ratio*, and this for misdemeanors inevitable to youth—lying, for instance,—and best cured by birch. He was not opposed to *fagging*, which boys accept as part and parcel of the institution of schools, and as the servitude of their feudal system; all he aimed to do was to regulate, and, as it were, to legalise the exercise of it. The keystone of his government was in the Sixth Form, which he held to be an intermediate power between the master and masses of the school; the value of which internal police he had learned from the Prefects at Winchester. But he carefully watched over this delegated authority, and put down any abuse of its power. The Præpositors themselves were no less benefited. "By appealing to their honor, by fostering their self-respect, and calling out their powers of governing their inferiors, he ripened their manhood, and they early learnt habits of command; and this system, found to work so well, is continued, and with many of its excellent principles, is

* Foot-ball is the game, *par excellence*, of Rugby, as cricket is of Eton. The fascination of this gentle pastime is its mimic war, and it is waged with the individual prowess of the Homeric conflicts, and with the personal valor of the Orlando of mediæval chivalry, before villanous saltpetre had reduced the Knight-errant to the ranks. The play is played out by boys with that dogged determination to win, that endurance of pain, that bravery of combative spirit, by which the adult is trained to face the cannon-ball with equal alacrity.—*Quarterly Review*, No. 204.

† Dr. Wooll was small in stature, but powerful in stripes; and under his head-mastership Lord Lyttleton suggested for the grim closet in which the rods are kept, the witty motto:—"Great Cry and Little Wool."—*See the Book of Rugby School, its History and Daily Life*. 1856.

new acted on in most of the chief public schools of England." Dr. Arnold died in 1841, on the day preceding his forty-seventh birthday, having presided over the school for fourteen years: in the chapel at Rugby he rests from his labors, surrounded by those of his pupils who have been prematurely cut off. "Yet," touchingly says the Rugbyian writer in the *Quarterly Review*, "if they have known few of the pleasures of this world, they at least have not, like him, felt many of its sorrows, and death has not separated those who in life were united."

Dr. Arnold procured from the Crown a high mark of royal favor—her Majesty having founded an annual prize of a Gold Medal, to which several other prizes have been added. Dr. Arnold was succeeded in the head-mastership by the Rev. Dr. Tait, who retired on his appointment to the Deanery of Carlisle, in 1849; and who, in 1856, was preferred to the bishopric of London.

"In the list of eminent Rugbyians are the Rev. John Parkhurst, the Greek and Hebrew lexicographer; Sir Ralph Abercrombie, the hero of Alexandria; William Bray, F. S. A., the historian of Surrey; Dr. Legge, Bishop of Oxford; Sir Henry Hallford, Bart., President of the College of Physicians; Dr. Butler, editor of *Æschylus*, &c."

JOHN LYON AND HARROW SCHOOL.

At the village of Harrow-on-the-Hill, ten miles north-west of London,—where Lanfranc built a church, Thomas à Becket resided, and Wolsey was rector—in the reign of Elizabeth there lived a substantial yeoman named John Lyon. For many years previous to his death he had appropriated 20 marks annually to the instruction of poor children; and in 1571, he procured letters patent and a royal charter from the Queen, recognizing the foundation of a Free Grammar School, for the government of which, in 1592, he drew up the orders, statutes, and rules. The head-master is directed to be "on no account, below the degree of Master of Arts;" or the Usher "under that of a Bachelor of Arts." They are always to be "single men, unmarried." The stipends of the masters are settled; the forms specified; the books and exercises for each form marked out; the mode of correction described; the hours of attending school, the vacations and play-days appointed; and the scholars' amusements directed to be confined to "driving a top, tossing a hand-ball, running and shooting;" and for the last mentioned diversion all parents were required to furnish their children with "bow-strings, shafts, and bracers to exercise shooting." In addition to scholars to be educated freely, the schoolmaster is to receive the children of parishioners, as well as "foreigners;" from the latter "he may take such stipends and wages as he can get, except that they be of the kindred of John Lyon the founder." The sum of 20*l.* was allotted for four exhibitions—two in Gonville and Caius College, Cambridge; the others in any college at Oxford—which scholarships have been increased. The revenues of the School estates which Lyon left, are now very considerable; so that one portion of the property, which 70 years ago produced only 100*l.* a year, now returns 4000*l.*

The school was built about three years after Lyon's decease:* the school room,

* John Lyon is buried in Harrow Church: the brass of his tomb states, "who hath founded a free grammar-school in this parish to have continuance for ever; and for maintenance thereof, and for releefe of the poore, and of some poore schollars in the universities, repairing of highwayes and other good and charitable uses, hath made conveyance of lands of good value to a corporation granted for that purpose. Prayne be to the Author of all goodness, who makes us myndful to follow his good example."

fifty feet in length, has large, square, heavy-framed windows, and is partly wainscoted with oak, which is covered with the carved names of many generations of Harrovians. The plastered walls above the wainscot were formerly filled with names and dates, but they have been obliterated with whitewash. Boards have since been put up on which the names are neatly carved, in regular order and of uniform size.

Among these inscriptions are the names of Parr; Sheridan, (only the initials R. B. S.); W. Jones, (Sir William); Bennett, (Bishop of Cloyne); Ryder, (Bishop of Lichfield and Coventry); Murray, (Bishop of Rochester); Dymock, (the Champion); Ryder, (Lord Harrowby); Temple, (Lord Palmerston); Lord Byron; and Peel, (Sir Robert); between the two last letters of the latter name is the name of Perceval, as cut by the lamented statesman.

Above the school room is the Monitors' Library. Here is a portrait of Dr. Parr; a portrait and bust of Lord Byron, and a sword worn by him when in Greece; and a superb fancy archery dress, worn on the day of shooting for the silver arrow, about the year 1766. Here, also, is a quarto volume of "Speech Bills." Near the School is the Speech Room, built by old Harrovians: the windows are filled with painted glass, and here is a painting of Cicero pleading against Catiline, painted by Gavin Hamilton. There is a Chapel for the accommodation of the scholars only; to which was added, in 1856, a "Memorial Chapel," in honor of those officers who fell in the Crimean war, who had been educated at Harrow School.* The head-master's house is in the street of Harrow, and with the school buildings and chapel, is in the Elizabethan style. The device of the school is a lion, rampant, the armorial bearings of the founder, and a rebus of his name (motto, *Sic Fortuna Domus*), to which have been added two crossed arrows, denoting the ancient practice of archery enjoined by Lyon; and on the Anniversary, six or twelve boys shot for a silver arrow, the competitors wearing fancy dresses of spangled satin. The last arrow was contended for in 1771: the butts were set up on a picturesque spot, "worthy of a Roman amphitheatre," at the entrance to the village.

Beyond the court-yard are courts for racket, a favorite game at Harrow. There is likewise a cricket-ground, and a bathing-place, formerly known as "the Duck Puddle."

The scholars, chiefly the sons of noblemen and gentlemen, number about 400.

Among the eminent Harrovians are William Baxter, the antiquary and philologist; John Dennis, the poet and critic; Bruce, the traveller in Abyssinia; Sir William Jones, the Oriental scholar; the Rev. Dr. Parr; the heroic Lord Rodney; Richard Brinsley Sheridan; Viscount Palmerston; the Marquis Wellesley; Mr. Malthus, the political economist; Spencer Perceval; Earl Spencer, who collected the magnificent library at Althorp; the Earl of Aberdeen; W. B. Proctor, (Barry Cornwall,) the poet; Lord Elgin, who collected the "Marbles" from the Parthenon; Lord Chancellor Cottenham; the Earl of Shaftesbury; and Lord Byron and Sir Robert Peel, both born in the same year, 1788.

Over the tomb is a marble monument erected by Old Harrovians in 1818; the Latin inscription written by Dr. Parr; above, the sculptor, Flaxman, has represented a master and three pupils, said to be Dr. Butler, the then head-master, and the three Percevals, the sons of the Minister.

* In the Chapel, the Church, and the School, there is no distinction of seats for the sons of noblemen. It was for this reason that Rufus King, the American Ambassador, sent his sons to Harrow, as the only school where no distinction was shown to rank.—*Smith's Handbook*.

XIV. THE SCHOOL AND TEACHER IN LITERATURE.

THOMAS GRAY. 1716—1771.

THOMAS GRAY, of all English poets the most finished artist, was born in London, in 1716, and was the only one of twelve children who survived the period of infancy. His father was a money-scriver, and of harsh and violent disposition, whose wife was forced to separate from him; and to the exertions of this excellent woman, as partner with her sister in a millinery business, the poet owed the advantages of a learned education, toward which his father had refused all assistance. He was sent to be educated at Eton, where a maternal uncle, named Antrobus, was one of the assistant-masters. He remained here six years, and made himself a good classic; he was an intimate associate of the accomplished Richard West, this being one of the most interesting school-friendships on record. West went to Oxford, whence he thus wrote to Gray:—

"You use me very cruelly: you have sent me but one letter since I have been at Oxford, and that too agreeable not to make me sensible how great my loss is in not having more. Next to seeing you is the pleasure of seeing your handwriting; next to hearing you is the pleasure of hearing from you. Really and sincerely, I wonder at you, that you thought it not worth while to answer my last letter. I hope this will have better success in behalf of your quondam school-fellow; in behalf of one who has walked hand in hand with you, like the two children in the wood,

Thro' many a flow'ry path and shelly grot,
Where learning lull'd her in her private maze.

The very thought, you see, tips my pen with poetry, and brings Eton to my view."

Another of Gray's associates at Eton was Horace Walpole; they removed together to Cambridge; Gray resided at Peterhouse from 1735 to 1738, when he left without a degree. The spirit of Jacobitism and its concomitant hard-drinking, which then prevailed at Cambridge, ill-suited the taste of Gray; nor did the uncommon proficiency he had made at Eton hold first rank, for he complains of college impertinences, and the endurance of lectures, daily and hourly. "Must I pore into metaphysics?" asks Gray. "Alas, I can not see in the dark; nature has not furnished me with the optics of a cat. Must I pore upon mathematics? Alas, I can not see in too much light; I am no eagle. It is very possible that two and two make four, but I would

not give four farthings to demonstrate this ever so clearly; and if these be the profits of life, give me the amusements of it." Yet Gray subsequently much regretted that he had never applied his mind to the study of mathematics; and once, rather late in life, had an intention to undertake it. His time at Cambridge was devoted to classics, modern languages, and poetry; and a few Latin poems and English translations were made by him at this period. In "the agonies of leaving college," he complains of "the dust, the old boxes, the bedsteads, and tutors," that were about his ears. "I am coming away," he says, "all so fast, and leaving behind me, without the least remorse, all the beauties of Stourbridge Fair. Its white bears may roar, its apes may wring their hands, and crocodiles cry their eyes out, all's one for that; I shall not once visit them, nor so much as take my leave."

In a letter to Mr. West, he says: "I learn Italian like any dragon, and in two months am got through the 16th Book of Tasso, whom I hold in great admiration; I want you to learn too, that I may know your opinion of him; nothing can be easier than that language to any one who knows Latin and French already, and there are few so copious and expressive."

In 1739, Gray accompanied Horace Walpole on a tour through France and Italy; but, as they could not agree, Gray being, as Walpole has it, "too serious a companion," the former returned to England in 1741. He next went to Cambridge, to take his degree in Civil Law. He now devoted himself to the classics, and at the same time cultivated his muse. At Cambridge he was considered an unduly fastidious man, and the practical jokes and "incivilities" played off upon him by his fellow-inmates at Peterhouse—one of which was a false alarm of fire, through which he descended from his window to the ground by a rope—was the cause of his migrating to Pembroke Hall. He subsequently obtained the professorship of Modern History in the University. He usually passed the summer with his mother, at Stoke, near Eton, in which picturesque locality he composed his two most celebrated poems—the Ode on a Distant Prospect of Eton College, and his Elegy written in a Country Churchyard.

Gray continued to reside at Cambridge, and prosecuted his studies in natural history, as well as in almost every department of learning, until 1771, when he died, and was buried, according to his desire, by the side of his mother, at Stoke.

There scattered oft, the earliest of the year,
By hands unseen, are showers of violets found.
The little red-bird builds and warbles there,
And fairy foot-steps lightly print the ground.

ON A DISTANT PROSPECT OF ETON COLLEGE.

Ye distant spires, ye antique towers,
 That crown the wat'ry glade,
 Where grateful science still adores
 Her Henry's holy shade;
 And ye, that from the stately brow
 Of Windsor's heights th' expanse below
 Of grove, of lawn, of mead survey,
 Whose turf, whose shade, whose flowers among
 Wanders the hoary Thames along
 His silver winding way!

Ah happy hills! ah pleasing shade!
 Ah fields beloved in vain,
 Where once my careless childhood stray'd
 A stranger yet to pain!
 I feel the gales that from ye blow
 A momentary bliss bestow,
 As waving fresh their gladsome wing,
 My weary soul they seem to sooth,
 And, redolent of joy and youth,
 To breathe a second spring.

Say, Father Thames, for thou hast seen
 Full many a sprightly race
 Disporting on thy margent green
 The paths of pleasure trace,
 Who foremost now delight to cleave
 With pliant arm thy glassy wave!
 The captive linnet which enthrall!
 What idle progeny succeed
 To chase the rolling circle's speed,
 Or urge the flying ball!

While some on earnest business bent
 Their murmuring labors ply
 'Gainst graver hours, that bring constraint
 To sweeten liberty:
 Some bold adventurers disdain
 The limits of their little reign,
 And unknown regions dare descry:
 Still as they run they look behind,
 They hear a voice in every wind,
 And snatch a fearful joy.

Gay hope is theirs, by fancy fed,
 Less pleasing when possess'd;
 The tear forgot as soon as shed,
 The sunshine of the breast:
 Theirs buxom health of rosy hue,
 Wild wit, invention ever-new,
 And lively cheer of vigor born;
 The thoughtless day, the easy night,
 The spirits pure, the slumbers light,
 That fly th' approach of morn.

GRAY'S ODE ON ETON COLLEGE.

Alas! regardless of their doom,
 The little victims play!
 No sense have they of ills to come,
 Nor care beyond to-day:
 Yet see how all around 'em wait
 The Ministers of human fate,
 And black Misfortune's baleful train!
 Ah, show them where in ambush stand
 To seize their prey the murth'rous band!
 Ah, tell them they are men!

These shall the fury Passions tear,
 The vultures of the mind,
 Disdainful Anger, pallid Fear,
 And Shame that sculks behind;
 Or pining Love shall waste their youth,
 Or Jealousy with rankling tooth,
 That inly knows the secret heart,
 And Envy wan, and faded Care,
 Grim-visaged comfortless Despair,
 And Sorrow's piercing dart.

Ambition this shall tempt to rise,
 Then whirl the wretch from high,
 To bitter Scorn a sacrifice,
 And grinning Infamy.
 The stings of Falsehood, those shall try,
 And hard unkindness' alter'd eye,
 That mocks the tear it forced to flow;
 And keen Remorse with blood defiled,
 And moody Madness laughing wild
 Amid severest woe.

Lo, in the vale of years beneath
 A grisely troop are seen,
 The painful family of Death,
 More hideous than their Queen:
 This racks the joints, this fires the veins,
 That every laboring sinew strains,
 Those in the deeper vitals rage:
 Lo, Poverty, to fill the band,
 That numbs the soul with icy hand,
 And slow-consuming Age.

To each his suff'rings: all are men,
 Condemn'd alike to groan;
 The tender for another's pain,
 Th' unfeeling for his own.
 Yet ah! why should they know their fate?
 Since sorrow never comes too late,
 And happiness too swiftly flies.
 Thought would destroy their paradise.
 No more; where Ignorance is bliss,
 'Tis folly to be wise.

THE ALLIANCE OF EDUCATION AND GOVERNMENT.

A FRAGMENT.

As sickly plants betray a niggard earth,
 Whose barren bosom starves her gan'rous birth,
 Nor genial warmth, nor genial juice retains
 Their roots to feed, and fill their verdant veins ;
 And as in climes, where Winter holds his reign,
 The soil, though fertile, will not teem in vain,
 Forbids her gems to swell, her shades to rise,
 Nor trusts her blossoms to the churlish skies :
 So draw mankind in vain the vital airs,
 Uniform'd, unfriended, by those kindly cares,
 That health and vigour to the soul impart,
 Spread the young thought, and warm the opening heart :
 So fond Instruction on the growing powers
 Of nature idly lavishes her stores,
 If equal Justice with unclouded face
 Smile not indulgent on the rising race,
 And scatter with a free, though frugal hand
 Light golden showers of plenty o'er the land :
 But Tyranny has fix'd her empire there,
 To check their tender hopes with chilling fear,
 And blast the blooming promise of the year.

This spacious animated scene survey,
 From where the rolling orb, that gives the day,
 His sable sons with nearer course surrounds
 To either pole, and life's remotest bounds.
 How rude see'er th' exterior form we find,
 Howe'er opinion tinge the varied mind,
 Alike, to all the kind, impartial Heav'n
 The sparks of truth and happiness has giv'n ;
 With sense to feel, with memory to retain,
 They follow pleasure, and they fly from pain ;
 Their judgment mends the plan their fancy draws,
 Th' event presages, and explores the cause ;
 The soft returns of gratitude they know,
 By fraud elude, by force repel the foe ;
 While mutual wishes, mutual woes endear
 The social smile and sympathetic tear.

Say, then, through ages by what fate confined
 To different climes seem different souls assign'd ?
 Here measured laws and philosophic ease
 Fix, and improve the polish'd arts of peace.
 There industry and gain their vigils keep,
 Command the winds, and tame th' unwilling deep.
 Here force and hardy deeds of blood prevail ;
 There languid pleasure sighs in every gale.
 Oft o'er the trembling nations from afar
 Has Scythia breathed the living cloud of war ;
 And, where the deluge burst, with sweepy sway
 Their arms, their kings, their gods were roll'd away.
 As oft have issued, host impelling host,
 The blue-eyed myriads from the Baltic coast.
 The prostrate South to the destroyer yields
 Her boasted titles and her golden fields.

With grim delight the brood of winter view
 A brighter day, and heavens of azure hue,
 Scent the new fragrance of the breathing rose,
 And quaff the pendent vintage as it grows.
 Proud of the yoke, and pliant to the rod,
 Why yet does Asia dread a monarch's nod,
 While European freedom still withstands
 Th' encroaching tide, that drowns her lessening lands;
 And sees far off with an indignant groan
 Her native plains, and empires once her own.
 Can opener skies and suns of fiercer flame
 O'erpower the fire that animates our frame;
 As lamps, that shed at eve a cheerful ray,
 Fade and expire beneath the eye of day?
 Need we the influence of the northern star
 To string our nerves and steel our hearts to war?
 And, where the face of nature laughs around,
 Must sick'ning virtue fly the tainted ground?
 Unmanly thought! what seasons can control,
 What fancied zone can circumscribe the soul,
 Who, conscious of the source from whence she springs,
 By reason's light, on resolution's wings,
 Spite of her frail companion, dauntless goes
 O'er Lybia's deserts and through Zembla's snows?
 She bids each slumb'ring energy awake,
 Another touch, another temper take,
 Suspends th' inferior laws, that rule our clay:
 The stubborn elements confess her sway;
 Their little wants, their low desires, refine,
 And raise the mortal to a height divine.

Not but the human fabric from the birth
 Imbibes a flavour of its parent earth.
 As various tracts enforce a various toil,
 The manners speak the idiom of their soil.
 An iron race the mountain-cliffs maintain,
 Foes to the gentler genius of the plain:
 For where unwearied sinews must be found
 With side-long plough to quell the flinty ground,
 To turn the torrent's swift-descending flood,
 To brave the savage rushing from the wood,
 What wonder, if to patient valour train'd
 They guard with spirit, what by strength they gain'd?
 And while their rocky ramparts round they see,
 The rough abode of want and liberty,
 (As lawless force from confidence will grow)
 Insult the plenty of the vales below?
 What wonder, in the sultry climes, that spread,
 Where Nile redundant o'er his summer-bed
 From his broad bosom life and verdure flings,
 And broods o'er Egypt with his wat'ry wings,
 If with advent'rous oar and ready sail
 The dusky people drive before the gale;
 Or on frail floats to neighb'ring cities ride,
 That rise and glitter o'er the ambient tide.

* * * * *

XV. NATHAN GUILFORD.

BY WILLIAM T. COGGESHALL.

(Ohio State Librarian.)

NATHAN GUILFORD, the leader of the movement by which the first liberal school-law for Ohio was secured, was the son of a physician, and was born in Spencer township, Worcester county, Massachusetts, on the nineteenth day of July, 1786. In his boyhood he worked steadily on his father's farm, during the spring and summer months, and attended a district school in the fall and winter, of each year. A marked disposition for reading and study led his father to determine that he should have a liberal education. Nathan was accordingly sent to a classical school, at Leicester, where he fitted himself for college. He entered Yale College when he was twenty-two years of age, in 1808, and graduated with a respectable position in the class of 1812. He was not distinguished for any special aptitudes or powers, but was regarded as a young man of good habits and fair talent, who would devote healthful energies, of mind and body, to some good work.

For a few months Mr. Guilford conducted a classical school at Worcester, Massachusetts. He then determined to make the practice of law his business, and entered at once upon the study of his profession. When he had been admitted to the bar, looking toward what was then the goal of many an earnest ambition, he emigrated to the West, and settled in Kentucky, with the probable intention of entering actively into political life; but opportunity did not occur, or his intentions changed, and in 1816 he removed to Cincinnati. There Mr. Guilford opened a law-office; but he soon engaged also in other pursuits. Following those inclinations which led the friends of his youth to trust that he would distinguish himself by useful identification with some enterprise for public welfare, he became known as a zealous advocate of a liberal system of common schools. As fast as his acquaintance extended, he impressed his views of what ought to be done for popular education in Ohio upon his friends, and he opened an extensive correspondence with gentlemen of influence in the middle and northern portions of the state.

Having once fairly decided that his plans ought to be accepted, he was not disposed to give up their advocacy because he found but a

few willing listeners. Opposition and indifference alike urged him to closer thought and more active efforts. The laws then existing were incompetent for, and the people generally were opposed to, any thing like an active movement toward the establishment of an efficient system of free schools. Not satisfied with the slow progress his conversation and his correspondence made, Mr. Guilford conceived the idea of securing the attention of the people by means of an almanac. "*Solomon Thrifty's Almanac*" was immediately issued. It contained the calendar, the "weather," and the astronomical changes, duly set down and certified to; but in addition to these, and to paragraphs of direct service to the husbandman, it had, on every page, something about free education—the value of common schools—the importance of general intelligence. It was a good almanac, and for seven years had an extensive circulation.

Meantime Mr. Guilford had opened a book-store in Cincinnati, and had become a publisher of other works as well as "*Solomon Thrifty's Almanac*." Wherever an opportunity offered, or could appropriately be taken, those works contained good words for free schools.

In the year 1820, Mr. Guilford was in correspondence with a considerable number of influential men who sympathized with, and were proud to act for, the movement to which he had been calling public attention. The first general school-law for Ohio, authorizing directors, committees, and clerks, with power to assess local taxes, build school-houses, and employ teachers, was passed by the legislature of 1820–21. The next year a committee, of which Caleb Atwater was chairman, recommended the appointment of seven commissions, to devise and report an efficient system of common schools. That committee was authorized; and Governor Allen Trimble appointed Caleb Atwater, Rev. John Collins, Rev. James Hoge, Nathan Guilford, Ephraim Cutler, Josiah Barber, and James Bell. Atwater, Collins, and Hoge agreed upon a report, and presented it to the legislature of 1823–24. It recommended a school system based upon the one then existing in the State of New York, making no provision for a general fund, other than that which might arise from the sale and lease of school-lands.

Nathan Guilford openly refused to co-operate with the committee. He said their plans were inadequate. In order that his position might be understood and widely made known, he addressed a letter to the committee, and a memorial to the General Assembly, in which he advocated with zeal and force the assessment of a general county tax, *ad valorem*. That was the first public appeal in Ohio for a legislative enactment requiring general taxation for school purposes. Mr. Guilford's memorial was printed, by order of the legislature, with the report of the committee. Its propositions were strenuously opposed

by a majority of the legislators, and the school-law of 1821 was not amended.

But Mr. Guilford, and the few who were willing to act with him, were not discouraged. They appealed from the legislature to the people. Mr. Guilford announced himself as a candidate for the state senate, and was elected by a handsome majority. When the legislature organized, he was appointed chairman of the school committee. He had prepared an elaborate report, arguing the cause of popular education, and urging his plans as not only practicable but as economical; and to that report he added a bill, which required a tax of one half-mill, to be levied by county commissioners, made township clerks and county auditors school officers, and provided for school examiners.

This report and bill were the subjects of animated discussion. Mr. Guilford did not content himself with public defense; but he devoted all the hours he could spare from other duties in explaining his bill privately to members of the legislature, and to influential men at the capital. When the final vote was taken in the senate, it was announced that the bill had passed, without amendment, by a vote of twenty-eight to eight.

Immediately Mr. Guilford, most actively assisted by Ephraim Cutler, of Washington county, devoted his energies to the preparation of the house of representatives for proper attention to the school-bill.

Various amendments were offered when the bill was reported to the house; but so decidedly had all, who were willing to take a step forward in school legislation, been impressed that what Mr. Guilford had prepared was wise and practicable, that his bill was passed, without the change of a word, by a vote of forty-six ayes to twenty-four nays—twenty-two majority.

Mr. Guilford returned to his constituents, in Hamilton county, determined that, whatever reception the law might have in other portions of the state, it should not fail to be useful in Cincinnati.

Public schools did not exist in Cincinnati in 1825. Private schools were numerous. The public money was not sufficient to keep open the schools more than six weeks in a year, and, to make up the deficits in the expenses of a term, rate-bills were assessed on all who sent pupils. The law of 1824-25, in a considerable degree, relieved the embarrassments of those who were laboring for the establishment of free schools, but it did not afford an income half sufficient. Mr. Guilford, taking counsel with wise friends, devoted himself to the then unpromising labor of making city free schools popular and efficient. In 1827, he called a public meeting for the purpose of discussing the school wants of the city, and devising ways and means by

which they might be provided for. Five gentlemen attended the meeting. They were all discouraged but Nathan Guilford. He was resolved that the few present should not shrink from service, and at his suggestion the meeting was organized. Mr. Guilford then moved that a committee be appointed, to report at an adjourned meeting. The motion prevailed, and Mr. Guilford was appointed to prepare the report. When the time set for the adjourned meeting arrived, three gentlemen assembled at the council-chamber—the president, the secretary, and Mr. Guilford. The expected report was ready. It recommended a special law for Cincinnati; set forth what ought to be its leading features; and forcibly argued the growing necessity for free schools for all the children of the city. The report was *unanimously* adopted. It was then signed by the officers of the meeting, and a petition, praying that the general assembly would give it respectful attention, was industriously circulated. Robert T. Lytle and Elijah Hayward then represented Hamilton county in the general assembly. When they received the report, its suggestions were prayed for by a large number of the most influential of their constituents. A bill was immediately presented by Mr. Lytle; and, without formidable opposition, became a law. It authorized the city council to levy a tax, and provided for local school-directors. The law read, however, “the city council *may* tax.” An indignation meeting was held, in which the legislators for Hamilton county were severely condemned “for increasing the burden of taxation.” Several large property-holders opposed the execution of the law with bitterness; and, for one year, the city council took no action respecting it.

Nathan Guilford then announced himself as a candidate for election in the city council. Other candidates “came out on the school question,” and an exciting canvass was the result. The friends of common school progress triumphed.

At the first session of the new council, Nathan Guilford proposed a tax of one per cent. This proposition was met with scorn; but Mr. Guilford calmly presented the reasons why, in his judgment, such a tax was required, and the levy was ordered. By that tax common schools were supported one year. When it was understood that free schools would be regularly open, a new difficulty met the school officers. There were no school-houses. The schools had to be kept in the basements of churches, and in dilapidated tenements, which could be rented cheap. Mr. Guilford brought an ordinance before council, proposing a loan of \$40,000, to be obtained on bonds running twenty years, bearing interest, to meet which a tax of one mill was suggested. This measure was adopted, after fair discussion, during which amendments, designed to divide the school-men, were

frequently offered. The money was obtained in Philadelphia, and the first school-house site was purchased. It was on Race street, near Front. A substantial building was immediately erected, and free schools were then fairly established in Cincinnati. But the people did not yet take general interest in their prosperity. Mr. Guilford felt the necessity of directing public attention to the free school movement; and, upon consultation with a few citizens, determined that a procession of the school-children, with music and banners, should march through the principal streets. He suggested this idea to the teachers. Without exception they declined to participate, alledging that such a demonstration would signally fail of the object desired, and that all who took part in it would be severely ridiculed. Mr. Guilford, however, went quietly on with his preparations; and when he declared that the demonstration would, at all hazards, be made, the teachers reconsidered their resolution and informed him that they would co-operate. Mr. Guilford then applied to council for a small appropriation, to purchase banners and provide music. His application was rejected. He ordered banners at his own expense, engaged a band of music, and employed all the sextons of the city to ring the bells of the churches which they attended, at ten o'clock on the morning of the day appointed for the demonstration.

The heavens were propitious. Many children, who had been instructed to appear in their best clothes, and who anticipated a happy holiday, looked up gladly to the clear sky when they arose, on the morning set apart for the first common school celebration in Cincinnati. At ten o'clock the church-bells began to ring—groups of school-children then crowded the sidewalks, on their way to Broadway, where the procession was to be formed. There they were met by a band of music; each school was presented with a banner, on which was an appropriate motto; and all were marched in line to Fourth street, Nathan Guilford and Calvin Fletcher leading the procession. The scene was novel. The ringing of the church-bells—the hurrying along the streets of hundreds of well-dressed children—the lively strains discoursed by the band—all had contributed to awaken the people of the city to a clear sense of the fact that an unusual demonstration was to be made, and Fourth street was crowded with curious, expectant people. The procession marched to the corner of Fourth and Main streets, where the children were conducted into the Presbyterian church, (the first edifice for religious services erected in Cincinnati.) Every portion of the large assembly-room was immediately crowded. Rev. Joshua L. Wilson, the pastor, invoked the blessing of God upon the children assembled, and upon the cause, to promote which they had been gathered together. Addresses were delivered by Mr. Guil-

ford and by Rev. Mr. Robinson—the band played several lively tunes—the children were delighted—and all the people were given fit occasion to talk about the common schools. The newspapers of the city all spoke in high praise of the demonstration and its effect; and from that day dates the interest in popular education which has made Cincinnati distinguished among the cities of our country for liberal and thorough free schools.*

Having secured good feeling for the schools, Mr. Guilford next gave his attention to the improvement of text-books. He prepared an Arithmetic, which was for many years almost universally used; and he published a revised edition of Webster's Spelling-book, improving it, as his friends have claimed, in many important particulars, which have since been recognized in other spelling-books.

Mr. Guilford, having mainly given up the practice of the law, was engaged in Cincinnati, as a bookseller and publisher, the greater portion of the time between 1825 and 1843. He then started the "*Daily Atlas*," a Whig journal, of which he was chief editor and proprietor until 1847. In 1849, a law was passed authorizing the Cincinnati Board of School Visitors to elect a superintendent of the city schools. Mr. Guilford was chosen. His health had become impaired, but he gave the best energies he could command to a work which enlisted the warmest emotions of his heart. He continued in office till 1852, when he was elected to the office of local magistrate. He was an active friend of the movement by which the Hughes High School, in 1847, and the Woodward, in 1852, were opened, under the auspices of the Cincinnati School Board; and in numerous other good works, of which we have not sufficient data to give particulars, manifested those noble characteristics which his common school labors so emphatically evince—characteristics which will associate his memory, through all the history of Ohio, with one of her proudest and most-to-be-cherished institutions.

Mr. Guilford died in the sixty-ninth year of his age, December 18th, 1854, lamented as an invaluable citizen, a philanthropist, and an exemplary husband and father.

Mr. Guilford was a tall, compactly-built man. His face was strongly marked, in his later years, with lines which showed that he had been a severe thinker and an earnest worker.

* In his first report as superintendent of schools, (1837,) Samuel Lewis said the only free schools in Ohio were in Cincinnati.

XVI. PUBLIC INSTRUCTION IN NORWAY.

By HARTVIG NISSEN, Educational Councillor.

I. PRIMARY OR DISTRICT SCHOOLS.

Norway has an area of about 5,750 square miles, whereof about two-fifths are unfit for any sort of cultivation, while of the remaining three-fifths, large tracts are covered with scanty wood, and scarcely fifty geographical miles are cultivated in corn-fields.

There are in Norway about 1,400,000 inhabitants. Of these about 180,000 dwell in the larger or smaller towns, while the remaining 1,220,000 are spread over the country districts. Generally, only one family dwells in each separate farm-house or cottage, and the distances of these houses or cottages from each other are, in many parts of the country, so great that it is not possible to bring together in any one spot a sufficient number of children to form a school. Herein lies an essential impediment to the satisfactory organization of the system of schools in the country districts of Norway. A sort of coercive or compulsory system, as regards the education of children, has been in operation, according to the Norwegian law, since 1789. The parents and guardians of every child are under a legal obligation to instruct, or cause the child to be instructed, in those elementary branches of education which are usually taught in the district schools. Although the law does not usually bind parents to send their children to any school properly so called, and still less to any public school established by the state, yet the result is the same as if it did so as regards the great majority of the lower classes, who are unable and have not time to instruct their children, nor means to pay for their children's instruction in private schools or by private teachers, especially in the country districts, where, as a matter of course, cheap private schools can not exist together with the public schools. The time during which children must either go to school or receive instruction at home, begins in the seventh or eighth year of their age, and ends at the period of their confirmation, which usually takes place when they are fourteen or fifteen years old. The number of children in the country districts, who are thus under the conditional obligation of going to school, may be taken to be about 198,000, of whom about 4,000 may be supposed to receive instruction either at home or in the higher public or private schools. In the towns the number of such children is about 25,000, of whom about 6,000 may be supposed to receive instruction in private or in the higher public schools. The number of the above-named children attending the

district schools may thus be estimated at about 218,000, while the number of those not attending the district schools may be taken to be about 10,000.

The state having thus imposed on parents a duty which they would not usually be able to fulfill, unless there existed, at proper intervals throughout the country, schools to which the children could be sent to obtain the instruction required by the law, it has also, by the same law, imposed on every district (in the country on every parish) the duty of establishing a sufficient number of such schools. It must be remarked that every town forms one municipality, and so does also every parish in the country, a certain number of towns and parishes forming one higher municipal body, called an "Amt" (county), of which there are eighteen in the whole country. This duty is, on account of the local peculiarities of the country above described, connected with great difficulties; and most places have hitherto been forced to make shift with very scantily endowed schools, where instruction is imparted only during a short time in the course of the year.

The schools in the country districts are divided into stationary or permanent, and circuit or itinerant schools. Every stationary school is attached to the nearest surrounding district, the children of which (as before mentioned) must go to the school, unless their parents provide in another manner for their receiving the instruction prescribed by law. The distance which the children have to go to such a school is usually not more than a quarter of a Norwegian mile, or about two English miles; sometimes, however, it is as much as four English miles. Every stationary school has its house, comprising a school-room and an apartment for the master. Every master at a stationary school has, moreover, besides his salary (which on an average can be reckoned at about 90 sp. drs.*), a free lodging, and a certain portion of land for his own use. The number of stationary schools in the country districts is estimated to be about 880, and the number of children who attend them about 24,000; there are thus, on an average, 63 children to each school. The time of instruction is from 16 to more than 40 weeks in the year; on an average it is about 30 weeks or 180 days in the year. As most of the pupils of these schools are divided into two classes, which attend school on alternate days, each pupil has on an average, opportunity for receiving instruction 90 days in the year.

The majority of the children belonging to the country population attend the circulating or itinerant schools. Every parish, which usually contains several churches, with their separate church districts, is divided into school districts. Every such school district not possessing one of the above described stationary schools, is again subdivided into several "Roder" (sections or circuits), the children of each of which attend the school together. Thus, although the whole district only has one teacher, there are in reality as many schools as there are sections or circuits in each

* One pound sterling is equal to four specie dollars and a half.

district. A district for a circulating school consists commonly of three or four sections. The teacher goes round from one section or circuit to another, to keep school. According to law, the youth of each circuit are to receive instruction during at least three months, or, where this is not possible, during at least two months in the year; but the fact is, that in some places the children in the circuit schools receive instruction during twelve weeks, but on an average during not more than eight weeks, over the whole country. The school is not, however, kept uninterruptedly in the same spot while within the limits of the same circuit. It is the duty of every farmer (Gaardmand) or small proprietor in the circuit, each in his turn, to provide a proper school-room in his own house, and to give the teacher board and lodging for a certain time, which is usually in proportion to the extent of the estate. The teacher usually moves with the school every week to a new house. The eight weeks in each year, during which the instruction is usually given by these schools in each circuit, are not consecutive, but distributed in several terms at various times, from October to April, that part of the year within the limits of which all the instruction of the circuit schools in most places begins and ends. In some places the teacher of the circuit school gives instruction also during some of the summer months, having either a district consisting of a greater number of circuits than usual, or to teach in each circuit during a greater number of weeks than the minimum required by law. The salaries of the circuit schoolmasters are very different. In some parts of the country only 12 sp. dra. are given, besides board and lodging in school time, for 80 weeks' teaching yearly, while in other parts the salary is 40 sp. dra. The whole number of such itinerating schoolmasters is about 2,000, and of circuits about 7,000.

According to the existing law on district schools in towns, every town is bound to establish so many schools that every child can receive two days' instruction per week all the year round, with the exception of the usual vacation, no teacher having on the same day more than 60 pupils. The district schools in towns are usually so arranged that every child receives two or three days' instruction weekly. In most places each school is provided with only one teacher, who, where each child is to receive three days' instruction weekly, teaches on alternate days each of the two classes into which the children belonging to the school are divided; while in places where each child is to receive two days' instruction weekly, he teaches every third day each of the three classes into which the children belonging to the school are in that case divided. The division into classes is usually regulated by the advancement of the pupils in knowledge. In places where the children have access to the school two days in the week, each child will be able to attend school about 84 days in the year, and in those places where the children have access to the school three days in the week, about 126 days in the year.

What has been above remarked concerning the time of instruction in the different classes of district schools, applies only to that time during

which the children have an opportunity of receiving instruction, and not to the time of instruction whereof the majority of the children actually avail themselves. Parents can indeed, according to law, be punished by the infliction of fines when their children, from having neglected to attend school, have not made such progress as they ought to have made; but in practice, this measure is seldom or never adopted unless the neglect appears to have taken place in a very remarkable degree. The fact is, that the children who attend circuit schools do not on an average actually receive instruction during more than four weeks in the course of the year. It must, however, be observed, that during the year, or at least the half-year, immediately preceding their confirmation, which usually takes place in the interval between the fourteenth and fifteenth year of their age, the clergyman of the place gives the children who are to be confirmed instruction in religion, several hours weekly, besides the instruction which they receive at the schools. Moreover, according to the existing law for the organization of schools in the country, all children above twelve years of age are bound, until two years after confirmation, to appear in church at the public catechisms which are conducted by the clergyman in connection with the usual divine service, and are held several times a year in each church. It must also be observed that in many of the country districts the parents are anxious, as far as they are able, to assist the school in giving their children religious instruction particularly. As regards those children who belong to the permanent schools in the country, the disproportion between the opportunity of receiving instruction and the instruction actually received is not so great as it is with respect to those who belong to the circuit schools. The same remark may be, on the whole, applied also to the schools in towns.

According to law, instruction is to be given at the district schools, as well in the country as in towns, in reading, religion, singing, writing, and arithmetic. School begins and ends every day with prayer or psalm singing, or both. In a number of circuit schools, the instruction is (contrary to law) limited to reading and religion, and in the great majority of circuit schools the instruction in writing and arithmetic does not extend beyond the first rudiments. As the circuit schools are kept alternately in the houses of the several farmers, and very frequently in the same rooms where the inmates are engaged in their daily avocations, there exist, of course, obstacles to the proper organization and successful operations of the schools. Very frequently the room is also extremely unwholesome, and especially it often happens that all ventilation is impossible, the windows not even being made to open. Drawings of rooms of itinerating schools in different parts of the country, and a drawing of the farm where one of these rooms is found, were exhibited at the Educational Exhibition. In many permanent schools, as well in the country as in towns, several other branches of instruction have been adopted; for instance, orthography, and sometimes a little history and geography.

Some superior district schools have been lately established, in which

the more advanced children, not only from the nearest surrounding district, but from the whole parish or municipality, besides receiving instruction in religion, writing, and arithmetic, learn the orthography and grammar of their mother tongue, history, geography, mensuration, and the rudiments of natural history and physics, also sometimes a foreign language, usually English or German. The number of such schools is as yet very small, as the municipalities or parishes are not obliged to establish any school of this kind. They however often do so voluntarily, encouraged by the hope of obtaining some assistance from the amount of money which the Storting (the National Assembly) has granted for the establishment of such higher district schools. In these schools a small sum is usually paid by the pupils; in all other district schools no payment is taken. The expense of the district schools in the country, including the outlay in kind of board and lodging for the circuit schoolmasters, is about 115,000 sp. drs. yearly. The cost of the district schools in the towns may be estimated at about 22,000 sp. drs.; adding to this the sum granted by the state to the five seminaries for teachers, namely about 8,000 sp. drs., together with the state subsidies to the poorer districts, it will appear that the country devotes on the whole about 195,000 sp. drs. yearly to the endowment and support of the district schools, in which about 213,000 children receive instruction.

The district schools are, with few exceptions, but poorly supplied with the means of instruction. This is especially the case with regard to the circuit schools, of which many have (beyond the pupils' own religious books) no other help than some few copies of the New Testament, a psalm book, and a rude but peculiar instrument used in teaching singing, called *Psalmodicon*, or *Monocord*, which in many places is also used in family worship. These means of instruction, belonging to the itinerating schools, the master, as a matter of course, takes with him from one farm-house to another, as he moves. All schools established by law lie under the joint management of the municipal authority (*Formandskabet*) in the towns and parishes, and the clergyman of the parish. No tax can be levied towards the support and improvement of schools, but after a grant of the municipality, which, however, by the law is bound to grant the means absolutely necessary to establish and keep up proper schools.* The head management of such schools is vested in a board, called "*Stiftsdirectionen*," which consists of the high sheriff and the bishop of the diocese, from whom the more important matters of education are sent to the Governmental department for church and education, in order to be submitted to the decision of government. Dissenters, of which there are but few in Norway, may send their children to school, but they are not obliged to let them take part in the religious instruction, but they, as well as the members of the Established Church, are by law bound to attend to the proper religious and temporal instruction of their children.

* It consequently depends on the people themselves whether the school is to be properly developed or not.

From the above remarks about the common schools in Norway it will be seen that the instruction given in most of these schools is of a very indifferent kind. But still the great bulk of the population does not stand low in point of education when compared with the people of other countries; this is a consequence partly of the fact that no child grows up quite destitute of education; and partly to the cultivating and improving impulses found within life itself out of school. That the clergyman of the parish has the charge of the religious instruction of the children, and that the parents also very often pay a great deal of attention to this point, has been remarked above. The farms being spread widely over the country certainly increases the difficulties in properly arranging and fitting up the school, and also excludes the improvement that frequent intercourse with a great many other people is sure to bring about; but, on the other hand, it gives the life within each family a direction by which the mind of the individual is turned inwards, and creates a desire of reading, and of thinking closely over what has been read. The grandeur of the scenery in many parts of the country excites the imagination, and keeps up and develops the poetic element in the mind. Singing and narrations of old stories and traditions from the remotest times—nay, even poetical contests—therefore, form a peculiar feature and an essential part of the social entertainment of the peasants of Norway, especially in the mountainous parts, when they meet at weddings, and on other festive occasions. The many dangers by which nature has surrounded the Norwegian peasant, and the many difficulties that he has to struggle against in various parts of the country, strengthens his courage and sharpens his wit and acuteness. But more than anything else the peculiar social and political station of the Norwegian peasant contributes to promote the development of his mental faculties, though but inefficiently begun in the school. Even when the country of Norway was during its union with Denmark deprived of national independence, the Norwegian citizen and peasant enjoyed personal liberty and social independence. The Norwegian "bonde," or yeoman, has never been oppressed by a predominant nobility, who never gained any ascendancy there. His feeling of liberty and independence is, therefore, strongly developed. Add to this, that the whole country is divided between a great many small proprietors, whose farms, however, are large enough to render it necessary for them to employ eight or twelve horses for the proper cultivation of their fields; and this affords an opportunity to the proprietor to spend much of his time in the study of, more or less, practical science. There is, therefore, comparatively speaking, a very large number of persons whose social position not only allows but induces them to cultivate their own minds, and take care of the education of their children. They are still more induced to do so by their political position. Every landed proprietor, however little his property may be, has a vote, and may himself be elected as a member of "Formandskabet" (the municipal authority) and of "Stortinget" (the National Assembly). At present more than half the members of the Storting are peasants, and

many among them, who have received no instruction but what the common schools above-mentioned have been able to give them, have, by the agencies of life itself been prompted by their own exertions to acquire such an amount of knowledge, and their mental faculties have been so much developed, that they in the Storting make most pithy and eloquent speeches upon all political and social subjects.

II. BURGER AND REAL SCHOOLS.

Of the 10,000 children who do not belong to the district schools about 4,000 may be supposed to receive instruction at home from parents, tutors, or governesses. Of the remaining 6,000, about one-half attend private schools, which are about on a par with, or very little superior to, the better class of district schools in the towns. The other half, or about 3,000, may be supposed to attend higher public or private schools, both for girls and boys, but principally the latter. Among these schools the so-called Burgher-schools should be first mentioned, of which there are more than twenty in different towns. There are public schools, in many of which girls are also educated, but in separate classes or sections. The branches of instruction in these schools, which in the smaller towns have two or three, and in the larger towns four or five or more teachers, are usually reading, writing, arithmetic, religion, orthography and grammar of the mother-tongue, one or more of the foreign languages—German, French, and English,—history, geography, the rudiments of mathematics, and sometimes the rudiments of drawing, natural history, and physics. The most completely endowed Burgher schools are called "Real" schools. Thus, Christiania, Trondhjem, and Bergen have each a "Real" school, established partly by the public, and partly by private legacies. In Christiania there are also several more or less complete private "Real" schools. The whole amount of expenses for the Burgher schools is about 80,000 sp. dollars.

III. LEARNED SCHOOLS.

In eleven towns there exists (usually instead of, but sometimes besides, the Burgher schools) public Real schools, established by the State, which are placed in connection with the learned schools (Latin schools) established by the State. The peculiarity of the arrangement of these schools is, that the lower classes (until the pupils complete their twelfth year as a normal age) form, as it were, a common trunk or stem, from which there afterwards issue two branches, the Latin school and the Real school. The first of these, the Latin or learned school, imparts during five or six years, to those who desire to go to the University, a special preparatory instruction, of which the classical languages and their literature form an essential part. The other branch, or the Real school, imparts a suitable preparatory instruction to those pupils who are destined, after completing their fifteenth or sixteenth year, to enter on practical life, or to attend higher technical or commercial special schools, (of which there are scarcely any in this country,) or to enter the military school. The branches of instruction in the united

Latin and Real schools are in the common classes—the mother-tongue, writing and drawing, singing and gymnastics, arithmetic, religious instruction, geography, history, natural history, German, and French. In the Latin classes of the united schools the branches of instruction are as follows—the mother-tongue, religious instruction, geography, history, German, French, mathematics, Latin, Greek, and Hebrew. In the Real classes the instruction is given in the mother-tongue, religious instruction, geography, history, natural history, German, French, English, mathematics, natural philosophy, writing, and drawing. In some of these schools the highest Real class gives the pupils a special preparation for commercial life by instruction in commercial correspondence, book-keeping, the properties of goods, &c.

In Christiania there are some private Latin and Real schools, the organization of which is in all essential points the same as the public schools. It must, however, be remembered, that while all the classes in the private school described have annual courses, the classes in the public Latin and Real schools have generally biennial courses, whence it follows that the number of classes in the latter is reduced to about half the number adopted in the former; and the total course of the learned school is likewise, on account of its less perfect organization with biennial classes, accomplished in six years. Five of these schools have also a less complete arrangement in the higher classes, the highest biennial Latin class being wanting; they can not, therefore, send pupils directly to the University, and are frequently called, to distinguish them from the others, "Middel-eg Real skoler." In the eleven public Latin and Real schools the number of pupils is altogether 700. There are also three public learned or Latin schools, which are not connected with the Real schools, viz., in Christiania, Trondhjem, and Bergen. They are destined, as well as the Latin schools which are connected with Real schools, to prepare those who intend to complete their education at the University. Their organization differs from that of the united Latin schools only inasmuch as they have retained the old arrangement in the study of languages, according to which the Latin language is to be learned before the modern languages; this order being reversed in the Latin schools which are connected with Real schools. The number of pupils in the three independent Latin schools is altogether somewhat over 300. These three schools are supported by their own resources, which they have obtained partly by legacies, and partly by endowments from the State in former times. Their yearly income arising from interests and from payments of pupils amounts altogether to about 28,000 specie dollars, which amount is, however, not wholly expended for the necessities of the schools. Adding to this 36,000 sp. drs., which sum represents the income of the combined Latin and Real schools, arising from pupils, payments, and contributions from the public and the State. The result is 64,000 sp. drs. as the total sum annually devoted to the support of the public learned and Real schools. As to the masters in the public Latin and Real schools, it must be

observed that nobody can be appointed as a "Rector" (or manager) of such a school unless he has first passed the first two examinations, common for all students in the university, namely, in the ancient and modern languages, history, geography, mathematics, and natural history, and after that the so-called philological examination. Vide "*Academiske Love for Studerende ved det Kongelige Norske Fredriks Universitet*," p. 18, sec. 12, and p. 40. Nobody can be appointed an "Overlærer" unless he has passed the examinations just mentioned, or the examination in divinity, or the examination by law, of 15th September, 1851, required to be passed by all who wish to be Real teachers.

The highest academy for public instruction is the University in Christiania. It has 81 professors, a very considerable library, and several valuable collections. 60,000 specie dollars per annum is the amount devoted to the University.

IV. ASYLUMS AND SPECIAL SCHOOLS.

Besides the schools hitherto enumerated, there should also be mentioned, as belonging to the general system of education, the Asylums, established in many towns, where little children from two to seven years old, stay during the daytime, while their parents are at work; and where they are not only taken care of, but also instructed in the first elements. These Asylums are supported partly by the public funds, but chiefly by voluntary annual contributions. The amount applied to the support of Asylums in the country can not, on the whole, be estimated at more than 6,000 sp. dollars.

An institution for the instruction and education of the deaf and dumb has been established by the State at Trondhjem, and there are also three private institutions for the instruction of deaf and dumb children, which are supported by the State.

Among those schools whose instruction takes a more special direction, must be named agricultural schools, drawing schools, and sailors' schools, which are all calculated for adult pupils, who have passed through the ordinary primary schools. Of agricultural schools there are fourteen. They receive young men at the age of about eighteen to twenty years. A more comprehensive account of the organization of agricultural schools may be found in the detailed description of the agricultural school at Munkvold, near Trondhjem. Of public drawing schools there are eight, which are supported partly by the public, and partly by the State. Their aim is chiefly to impart to mechanics' apprentices the necessary knowledge of drawing; besides which there are usually lectures on the rudiments of practical mathematics and physics. The yearly cost of these drawing schools is about 6,000 sp. dols., whereof one-half is applied to the drawing school at Christiania, which on this account is far more completely endowed than the others. From this school, various means of instruction and several works executed by the pupils, were exhibited at St. Martin's Hall. Of sailors' schools, to which both the state and the respective

communities furnish contributions, there are as yet only few. In many places, especially in the towns, there are Sunday schools, whose object is to impart to adults that elementary instruction, which they had not opportunities of acquiring in their childhood. For this purpose instruction is usually given during a few hours in the morning or evening in reading, writing, and arithmetic, sometimes also in the orthography, and grammar of the mother-tongue, and likewise in history and geography. Besides this, instruction is generally given in religion, or portions of Scripture are read. The cost of the Sunday schools is very inconsiderable, and is defrayed either from gifts or by public subscription.

On establishing a calculation of what the country devotes on the whole to the support of the lower and higher schools, both public and private, before mentioned, the amount must be supposed to be about 850,000 dols., not including the land possessed by the masters of the permanent schools in the country.

XVII. MODES OF IMPROVING A FACTORY POPULATION.

THE following Paper was read by Edward Akroyd, M. P., before the "National Association for the Promotion of Social Science," in 1857.

In detailing my own exertions to improve the intellectual, moral, and physical condition of my work-people, numbering nearly 5000, I must premise that I am not singular in these efforts, nor do I take credit to myself for all that has been done in my establishment. My late father, who founded the business, took an active part in improving the condition and promoting the education of his work-people. He built a large school, attached to the works at Halifax, in the year 1839, and personally instructed a Sunday-school class. My brother co-operated with me in every beneficent provision for those in our employ, until he withdrew from business, a few years ago. Other manufacturers also have done, and are doing, their parts most cheerfully and energetically in the same direction.

My works are situated at Copley and at Halifax, in the West Riding of Yorkshire. Copley lies in a valley, on the banks of the river Calder, and the situation is one of great natural beauty. The trunk-line of the Lancashire and Yorkshire Railway passes within a few yards of the works, and parallel thereto runs the Calder and Hebble Canal.

At Copley mill, the manufactory is exclusively worsted, and the process that of spinning. The works may be called self-contained; that is, they are shut in, and form a small hamlet of themselves, in which there are no residents except those in my employ. The cottages of the work-people are intended to be model cottages; fitted up with every convenience required in such habitations, each having its garden-plot, and the whole well supplied with water, conveyed to each house in pipes. The village is also lighted with gas. About 1000 persons are employed in the mill, and every effort is made to secure their comfort, and the education of their families.

Many of the work-people are not residents in the village, and a large dining-room, capable of accommodating 700 persons, has been provided. The room is fitted up with every necessary and convenient apparatus, and the culinary department is presided over by a cook and assistants. As it has ever been an object with me rather to develop the power, and to encourage the self-reliance, of the people

than to supersede them, this establishment is managed by a committee of the work-people, appointed by and from amongst themselves. It is the duty of this committee to see that breakfast, dinner, or tea may be procured at the lowest possible cost, and that the quality and cookery of the food be good and wholesome.

A library is attached to the works, to which any of my work-people have access, free of charge.

A news-room is provided, supplied with the newspapers of the metropolis and of the locality, and also with the current periodical literature.

A band is established at the works, and its performances are very creditable. It plays out of doors occasionally, when the weather is favorable; at other times in a room provided for that purpose.

Allotment-gardens are provided for the workmen; and, in connection therewith, an horticultural and floral society has been established, to promote the knowledge and cultivation of fruits, flowers, plants, and vegetables. An exhibition is held annually, at which prizes are given for the best productions of the respective gardens.

To strengthen the habit of observation, and to cherish a taste for the beauties of nature, I give prizes for the best collection of wild plants and ferns growing in the neighborhood.

Recreation-grounds are provided for the juvenile and adult members of the establishment, and every encouragement is given to the practice of healthy out-door sports and athletic games.

A sick and funeral club is also established, and means are taken to secure regular medical attendance and medicines, for those who desire it, at a small rate of subscription. This is easily accomplished, by the numbers who avail themselves of the opportunity so offered.

Such are the arrangements which have been made at the Copley works for the material comfort of the work-people. For their spiritual welfare I have made special provision. Divine service is celebrated every Sunday in the school-room, by a chaplain attached to the works, and who resides in the midst of his flock.

What has been done at Copley has been repeated at my establishments at Halifax, on a scale enlarged in proportion to the greater number there employed; with this difference, that as the works at Copley are in the country, self-contained, isolated, and at a distance from any village, the provision alluded to is necessarily confined to my own work-people, while at Halifax my work-people, forming part of the population of that town, which numbers about 33,600 inhabitants, these institutions, instead of being confined to my own works, are in some measure thrown open to all those who choose to avail themselves of them, whether they may be in my employ or not. I

may observe that this course has been productive of the happiest and most encouraging results.

The advantages thus offered—such as the use of an extensive library and news-room, medical dispensary, sick and burial clubs, clothing society, allotment-gardens, recreation society, band and choral society—are largely used and highly appreciated, and are therefore constantly increasing, both in extent and efficiency. Here, too, several additional arrangements, of a practical economical character, have been adopted; such as the establishment of a public bakehouse, where is made bread of a good, wholesome quality, both better in kind and more economical in the means of its production than is in ordinary cases to be obtained by the poor of the working classes.

In connection with the bakehouse, I have made arrangements for the supply of tea, coffee, and soup, during winter, at low prices. I have opened a coal depôt, at which the poor only may purchase small quantities of good fuel at cost price.

As a political economist myself, I am fully aware of the objections which may be justly raised against any unwise interruptions of the ordinary channels of supply and demand. But we must recollect that, upon the common principles of trade, the prices of all articles of consumption are materially enhanced by the retailers to the poor, who must be compensated for their additional trouble, and for the loss they may sustain by the subdivision of their commodities into small parcels, and where credit is given to cover the extra risk of pecuniary loss. To meet this additional tax upon their impoverished means, the working classes have formed co-operative societies; which, buying largely at wholesale prices, are able to retail to small customers upon lower terms than some of the smaller shopkeepers can offer.

In the establishment of the bakehouse in my own district, my aim has been to secure for the poor of the working classes a good, wholesome article, at a moderate price; and, by offering an advantage to the retailers of bread, I have secured to them the almost entire distribution.

I have also been anxious to help and encourage working-men to form the habit of saving, and I have therefore established a penny savings bank, in which the pecuniary savings of juveniles and adults are received. The bank has been very successful, and the number of depositors steadily increases. Many boys contribute to the bank, generally to scrape together the means of gratifying a boyish fancy. One ambitious lad wanted a watch; others, perhaps, a toy or instrument of sport. An objection may be taken that, to teach boys to save for the indulgence of their own pleasures, is not the way to im-

cultivate provident habits. But there must always be an inducement—a special object for which to save. A married man regards his wife and family; a single man looks forward to being married and becoming a householder; but a boy, who laughs at the idea of sickness and old age, saves, in the first instance, for some article of youthful desire. Implant the habit of saving in fresh young soil, and afterward it will not be difficult to train it in the right direction.

At present there remains one great and important object which I have in view for promoting habits of forethought and prudence amongst the working classes. It is the institution of a provident society, which shall place within reach of an industrious, prudent workman the following benefits:—

1. The provisions of an ordinary sick club.
2. Provision in cases of protracted illness.
3. An assurance against severe accidents.
4. A pension for old age, by means of government annuities.
5. Deferred sums, payable at any given age.
6. An ordinary life assurance, to the extent of £200.

But this object I can not accomplish alone. An association somewhat analogous to that of an assurance company is required, which shall cover a sufficiently large area and variety of occupation to produce an equable result. For this purpose I am promoting the formation of a large society, upon a permanent representation basis, which shall include the whole of the West Riding of Yorkshire. I broached the scheme during the autumn of last year, through the medium of a pamphlet, and met with encouraging success. An influential provisional committee was formed, which includes the names of many of the nobility, clergy, gentry, and manufacturers of the Riding, representing all classes and parties. At present, the rules and regulations of the proposed society are being matured by an executive committee.

I employ about 1100 children in my works, between the ages of eight and thirteen, all of whom, in accordance with the requirements of that act, attend school for five days in the week, and for three hours each day. Now, although their attendance at school can not but be, under any circumstances, beneficial, I have discovered that, owing to the entire ignorance of the children when they first become employed, and to the too early cessation of the period when they are by law compelled to attend school, the results are not so satisfactory as could be desired. I have endeavored to remedy these evils by establishing an infant school, as a preliminary to factory education, and for children from three to eight years of age. A charge of two pence per week is made; and since the school has numbered 380 infants it has been almost self-supporting.

Supplementary to the factory schools, I have instituted a working-man's college, for the education of evening classes of youths and adults above thirteen, the period when the factory education required by law ceases. The college is under the superintendence of trained and certificated masters, and there are now about 150 students.

Besides a working-man's college, I have opened, with even more success, evening classes for young women; reserving one evening in each week for industrial training, and for the cultivation of useful domestic arts, which are too often neglected in the manufacturing districts. About 160 young women diligently attend these classes, which are conducted by a well-trained and zealous schoolmistress.

In concluding this paper, I will only add, that I am fully convinced, by the result of the experiments I have thus made, and their uniform success, that it is possible to make the people feel that their own and their employer's interests are identical; provided the latter, who may be considered the stewards, under God, of the commercial wealth of the nation, will acquit themselves of their responsibilities toward those who, under the order of Providence, are intrusted to their care.

XVIII. EDUCATIONAL MISCELLANY.

THE PRIMER.

The earliest printed book used in the tuition of youth was the "*Primer*" (*Primarius*, Latin,) a small prayer-book, in which children were taught to read, and the Romish book of devotions in the monastic schools. At the Reformation the "*Primer*" was retained, but the requisite changes were made. In 1545, Henry VIII. ordered to be printed an English "form of Public Prayer," entitled the "*Primer*," said to be "set furth by the Kinge's majestie, and his clergie, to be taught, lerned, and red." A copy of this rare book is extant: it was once the property of Sir John Clark, priest of the chapel of Leedsbridge, and founder of the school. This appears from the following autograph note in the "*Calendar*:" "This day I began the schole at Leeds, July 4, 1563."

It would be hard to say when the contents of the "*Primer*" were changed from sacred to secular: the change was probably very gradual, more especially as the primers printed to this day contain occasional prayers, the good seed which can not be sown too early in the mind of childhood. The accounts of the grammar schools of the sixteenth century contain much interesting evidence of the value attached to school-books by the care which is directed to be taken of them. Thus, in the corporation records of Boston, in Lincolnshire, in 1578, it was agreed that "a Dictionarye shall be bought for the scollers of the Free Schoole; and the same booke to be *tyed in a cheque*, and set upon a deak in the scoole, whereunto any scoller may have accesse as occasion shall serve." There are later entries of the corporation purchasing dictionaries for the use of the school; besides presents of dictionaries, lexicons, grammars, folio English Bibles, &c.—(*Thompson's History of Boston.*)

THE HORNBOOK.

Another "dumb teacher" was the Hornbook, of which a specimen exists, in black-letter, of the time of Queen Elizabeth. It appears to be at least as ancient as 1570, is mounted on wood, and protected with transparent horn.

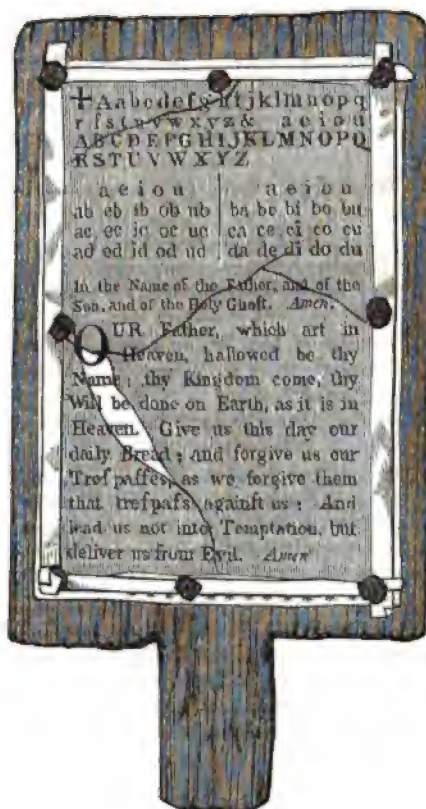
"The letters may be read, *through the horn*,
That makes the story perfect."—*Ben Johnson.*

There is a large cross, the *criss-cross*, and then the alphabet in large and small letters. The vowels follow next, and their combinations with the consonants; and the whole is concluded with the Lord's Prayer and the *Roman* numerals. The Arabic numerals are not given. Shakspeare thus refers to the cross-row of the Hornbook:—

"He hearkens after prophecies and dreams;
And from the cross-row plucks the letter G;
And says, a wizard told him that by G
His issue disinherited should be."—*Richard III.*

Again, in "*Love's Labour's Lost*," act v. scene 1, Moth, the page to Armado, says, in describing Holofernes the schoolmaster, "He teaches boys the Hornbook."

Cotgrave has, "*La Croix de par Dieu*, the Christ's-crosse-rowe, or *horne-booke*, wherein a child learnes it;" and Florio, ed. 1611, p. 93, "*Centurulo*, a childes horne-booke hanging at his girdle."



HORNBOOK OF THE EIGHTEENTH CENTURY.

In the collection of Sir Thomas Phillipps, at Middlehill, are two genuine Hornbooks of the reigns of Charles I. and II. Locke, in his "*Thoughts on Education*," speaks of the "ordinary road of the Hornbook and Primer," and directs that "the Lord's Prayer, the Creed, and the Ten Commandments he should learn by heart, not by reading them himself in his Primer, but by somebody's repeating them before he can read."

Shenstone, who was taught to read at a dame-school, near Halesowen, in Shropshire, in his delightfully quaint poem of the *Schoolmistress*, commemorating his venerable preceptress, thus records the use of the Hornbook:—

"Lo; now with state she utters her command;
Eftsoons the urchins to their tasks repair;
Their books of stature small they take in hand,
Which with pellucid horn secured are
To save from finger wet the letters fair."

Cowper thus describes the Hornbook of his time:—

"Neatly secured from being soiled or torn
Beneath a pane of thin translucent horn,
A book (to please us at a tender age
'Tis called a book, though but a single page)
Presents the prayer the Saviour designed to teach,
Which children use, and parsons—when they preach."
Tirocinium, or a Review of Schools, 1784.

We have somewhere read a story of a mother tempting her son along the cross-row by giving him an apple for each letter he learnt. This brings us to the gingerbread alphabet of our own time, which appears to have been common a century and a half since.

"To master John the English maid
A Hornbook gives of gingerbread;
And, that the child may learn the better,
As he can name, he eats the letter."—*Prior.*

An anecdote illustrative of Lord Erskine's readiness is related—that, when asked by a judge if a single sheet could be called a book, he replied, "The common Hornbook, my lord."

In "*Specimens of West Country Dialect*," the use of the Hornbook is thus shown:—

"Commether, *Billy Chubb*, an breng the hornen book. Gee ma the vester in the windor, you *Pai Came!*—what! be a sleepid—I'll wäke ye. Now, *Billy*, there's a good bway! Ston still there, and mind what I da sä to ye, an whaur I da point. Now; criss-cross, girt ä, little ä—b—o—d. That's right *Billy*; you'll soon lorn the criss-cross-lain—you'll soon auvergit *Bobby Jiffy*—you'll soon be a *scholard*. A's a pirty chubby bway—Lord love'n!"

John Britton, who was born in the parish of Kington St. Michael's Wilts, in 1771, tells us, in his "*Autobiography*," that he was placed with a schoolmistress. "Here," he writes, "I learnt 'the Christ-cross-row' from a Hornbook, on which were the alphabet in large and small letters, and the nine figures in Roman and Arabic numerals. The Hornbook is now a rarity." Such a Hornbook we have engraved. It was met with in the year 1850, among the old stock of a bookseller at Peterborough, in Lincolnshire, and is thus described: Its dimensions are 9 by 5 inches. The alphabet, &c., are printed upon white paper, which is laid upon a thin piece of oak, and is covered with a sheet of horn, secured in its place by eight tacks, driven through a border or mounting of brass; the object of this horn-covering being to keep the "book," or rather leaf, unsoiled. The first line is the cross-row; so named, says Johnson, "because a cross is placed at the beginning, to show that the end of learning is piety."

The Hornbook was not always mounted on a board; many were pasted on the back of the horn only.

Such was the rudeness of the "dumb teacher" formerly employed at the dame-school, and elsewhere. It was, in all probability, superseded by Dr. Bell's sand-tray, upon which the children traced their own letters. Next came the "Battledore" and "Reading-made-Easy;" though the Spelling-book is considerably older than either. The Battledore, by the way, reminds us of a strategy of tuition mentioned by Locke: "By pasting the vowels and consonants on the sides of dice, he has made this a play for his children, whereby his eldest son in coats has played himself into spelling."—*Timb's "School Days," &c.*

TRIPOS.

The original *Tripos*, from which the Cambridge class-lists have derived their names, was a three-legged stool, on which, on Ash-Wednesday, a bachelor of one or two years' standing (called therefrom the Bachelor of the Stool) used formerly to take his seat, and play the part of a public disputant in the quaint proceedings which accompanied admission to the degree of B. A. In course of time, the name was transferred from the stool to him that sat on it, and the disputant was called the *Tripos*; thence it passed to the *day* when the stool became a post of honor; then to the *lists* published on that day, containing the seniority of commencing B. A.'s, arranged according to the pleasure of the proctors; and, ultimately, it obtained the enlarged meaning now universally recognised, according to which it stands for the examination, whether in mathematics, classics, moral or physical science, as well as for the list by which the result of that examination is made known.—*Notes and Queries*, No. 117.

UNIVERSITY HONORS.

A very prevalent mistake is supposing that men, who have attained great distinction and high honors at the two English universities, do not, in after-life, occupy the most eminent positions at the bar, or the bench, and in the senate.

OXFORD.—Earl of Eldon, English Prize Essay, 1771; Lord Tenterden, (Lord Chief Justice of the King's Bench,) English Essay, 1786, Latin verse, 1784; Sir W. E. Taunton, (Judge in the Court of King's Bench,) English Essay, 1793; J. Phillimore, (Professor of Civil Law,) English Essay, 1798; Sir C. E. Gray, (Chief Justice of Bengal,) English Essay, 1808; Sir J. T. Coleridge, (Judge in Court of Queen's Bench,) English Essay, 1813, Latin verse, 1810, Latin Essay, 1813, 1st class Classics, 1812; Herman Merivale, (Professor of Political Economy,) English Essay, 1830, 1st class Classics, 1827; Roundell Palmer, (Deputy Steward of the University,) Latin Essay, 1835, Latin verse, 1831, English verse, 1833, 1st class Classics, 1834; Lord Colchester, Latin verse, 1777; Sir J. Richardson, (Judge in Common Pleas,) Latin verse, 1792; Sir Christopher Puler, (Chief Justice at Calcutta,) Latin verse, 1794; G. K. Rickards, (Professor of Political Economy,) English verse, 1830, 2nd class Classics, 1833; Nassau W. Senior, (Professor of Political Economy,) 1st class Classics, 1811; Sir Richard Bethell, (Attorney-General, University Counsel,) 1st class Classics, 1818; Honorable J. C. Talbot, (Deputy High Steward,) 1st class Classics, 1825; Travers Twiss, (Regius Professor of Civil Law,) 2nd class Classics, 1830.

CAMBRIDGE.—Sir F. Massey, (Baron, Exchequer,) 4th Wrangler, 1752, Senior Medalist; Sir Elijah Imper, (Chief Justice, Port William, Bengal,) 2nd Senior Optime, 1756, Junior Medalist; Sir J. Wilson, (Judge, Common Pleas,) Senior Wrangler, 1761; Lord Alvanley, (Chief Justice, Common Pleas,) 12th Wrangler, 1766; the late Lord Ellenborough, (Chief Justice, King's Bench,) 3rd Wrangler, 1771, Senior Medalist; Sir S. Lawrence, (Judge, Common Pleas,) 7th Wrangler, 1771; Sir H. Russell, (Judge in India,) 4th Senior Optime, 1772; the late Lord Manners, (Chancellor of Ireland,) 5th Wrangler, 1777; Chief Justice Warren, of Chester, 9th Wrangler, 1785; the late John Bell, Senior Wrangler, 1786, Senior Smith's prizeman; Sir J. Littledale, (Judge in Court of Queen's Bench,) Senior Wrangler, 1787, Senior Smith's prizeman; Lord Lyndhurst, (late Lord Chancellor,) 2nd Wrangler, 1794, Junior Smith's prizeman; Sir John Beckett, (Judge Advocate,) 5th Wrangler, 1795; the late Sir John Williams, (Judge, Queen's Bench,) 18th Senior Optime, 1798; the late Sir N. C. Tindal,

(Chief Justice, Common Pleas,) 8th Wrangler, 1799, Senior Medalist; the late Sir L. Shadwell, (Vice-Chancellor of England,) 7th Wrangler, 1800, Junior Medalist; Starkie, (Downing Professor of Law, University Counsel,) Senior Wrangler, 1803, Senior Medalist; the late Sir T. Coltman, (Judge, Common Pleas,) 13th Wrangler, 1803; Lord Chief Baron Pollock, Senior Wrangler, 1806, Senior Smith's Prizeman; Lord Langdale, Senior Wrangler, 1808, Senior Smith's Prizeman; the late Baron Alderson, Senior Wrangler, 1809, Senior Smith's Prizeman, and Senior Medalist; Sir W. H. Maule, (Judge, Common Pleas,) Senior Wrangler, 1810, Senior Smith's Prizeman; Baron Platt, (Exchequer,) 5th Junior Optime, 1810; Chambers, (Judge of Supreme Court, Bombay,) 5th Wrangler, 1811; Lord Cranworth, 17th Wrangler, 1812; Mirehouse, (Author of Law of Tithes, and Common Sergeant of City of London,) 13th Senior Optime, 1812; Sir J. Romilly, (Downing Professor of Law, and Professor of Law, University College, London,) 4th Wrangler, 1813; Vice-Chancellor Kindersley, 4th Wrangler, 1814; Sir B. H. Malkin, (Chief Justice of Prince of Wales' Island,) 3rd Wrangler, 1818; Lord Justice Turner, 9th Wrangler, 1819; the late R. C. Hildyard, (Queen's Counsel,) 12th Senior Optime, 1823; Mr. John Cowling, Q. C., M. P., (University Counsel, and Deputy High Steward,) Senior Wrangler, 1824, Senior Smith's Prizeman; Vice-Chancellor Wood, 24th Wrangler, 1824; Vice-Chancellor Parker, 7th Wrangler, 1825; Mr. Loftus T. Wigram, Q. C., (M. P. for University,) 8th Wrangler, 1825; Chief Justice Martin, (New Zealand,) 26th Wrangler, 1829, 3rd in 1st class Classics, and Junior Medalist.—*Times* "School Days."

THE BRITISH MUSEUM.

The British Museum has been the growth of a century, between the purchase of Montague House for the collection in 1753 and the completion of the new buildings. The Museum originated in a suggestion in the will of Sir Hans Sloane, (d. 1753,) offering his collection to parliament for £20,000, it having cost him £50,000. The offer was accepted; and by an Act (26th George II.) were purchased all Sir Hans Sloane's "library of books, drawings, manuscripts, prints, medals, seals, cameos and intaglios, precious stones, agates, jaspers, vessels of agate and jasper, crystals, mathematical instruments, pictures," &c. By the same Act was bought, for £10,000, the Harleian Library of MSS., (about 7600 volumes of rolls, charters, &c. ;) to which were added the Cottonian Library of MSS., and the library of Major Arthur Edwards. By the same Act also was raised by lottery £100,000, out of which the Sloane and Harleian collections were paid for; £10,250 to Lord Halifax for Montague House, and £12,873 for its repairs; a fund being set apart for the payment of taxes and salaries of officers. Trustees were elected from persons of rank, station, and literary attainments; and the institution was named THE BRITISH MUSEUM. To Montague House were removed the Harleian collection of MSS. in 1755; other collections in 1756; and the Museum was opened to the public January 15, 1759.

ROBERT RECORDE was the first who wrote on Arithmetic, and the first who wrote on Geometry, in English; the first who introduced Algebra into England; the first who wrote on Astronomy and the doctrine of the Sphere in England; and, finally, the first Englishman (in all probability) who adopted the system of Copernicus. Recorde was also the inventor of the present method of extracting the square-root; the inventor of the sign of equality; and the inventor of the method of extracting the square-root of multinomial algebraic quantities.

XIX. BOOKS OF REFERENCE.

THIRTY years ago, a very few expensive foreign works were the only books of reference accessible to the American scholar. But so rapid has been our progress as a nation in this respect that there now exists, not a complete American scientific and learned apparatus, but an exceedingly valuable and creditable collection of American books of reference, extensive enough for most purposes of the teacher, the scholar, the literary man, the man of business, and the general reader.

With a view to afford our subscribers some useful directions for selection among such books, we have collected the following list of American Reference Books. The names of several others, which have already been noticed in this Journal, are given at the end of the list.

The New American Cyclopædia. Edited by GEORGE RIPLEY and C. A. DANA. Vol. VIII. Fugger—Hayman. New York. D. Appleton & Co. 1859. Roy. 8vo., pp. 788.

We have already twice referred to this greatest American literary enterprise of the day, with hearty commendation. We know of no encyclopædia more certain to be needed every day by every man. The mastery of half the work would alone constitute a man of extended general information.

Appleton's Dictionary of Machines, Mechanics, Engine-work, and Engineering. New York: D. Appleton & Co. 2 vols., roy. 8vo., pp. 960 each.

A very valuable and convenient manual for the mechanician. Its treatises contain much that is interesting to all; the articles, *e. g.*, on the Croton Aqueduct and the Brooklyn Dry Dock, both afford the engineer his professional information and contain narratives of two enterprises in which every American may take justifiable pride. Large masses of technical information, and many valuable tables, and clear and detailed cuts, are throughout given.

A Critical Dictionary of English Literature, and British and American Authors. By S. AUSTIN ALLIBONE. Vol. I. Philadelphia: Childs & Peterson, 1856. Roy. 8vo., pp. 1005.

This work fills a new place in literature. We have had cyclopædias of biography, and of books; but none of the book-makers' lives and works together.

The list of names is very satisfactorily full; for no such list will ever be perfect. The bibliographical lists of each author's works are also remarkably full and correct. The indexes, which Mr. Allibone proposes to add, will constitute an extensive apparatus for referring to literature. In short, the work promises to be indispensable to every man of letters or literary culture or leisure.

American Almanac and Repository of Useful Knowledge for 1860. Boston: Crosby, Nichols & Co. 12mo., pp. 391.

This invaluable annual has now completed a series of thirty-one numbers. The thirty volumes contain a mass of general and detailed information respecting the financial, political, intellectual, and social condition of the country and the states nowhere else so compact and accessible. Each year's number furnishes the owner with the means of a solid knowledge of the condition of the country

for that year. Its meteorological and scientific discussions are of a high order of value; and the almanac is prepared by Mr. Geo. P. Bond, of Cambridge, one of the most competent persons in the United States. The obituary notices alone, which, as well as the miscellaneous matter, may be referred to by the indexes in the volumes for 1839, 1849, and 1859, constitute a great body of biographical information.

A Copious and Critical Latin-English Lexicon, founded on the larger Latin-German Lexicon of Dr. W. FREUND. By E. A. ANDREWS, LL.D. New York: Harper & Brothers. 1860. Imp. 8vo., pp. 1683.

There are many living graduates of our colleges who had no Latin Lexicon, except the venerable school edition of Ainsworth; and, until the publication of Prof. Andrews' work, no other was accessible to the American student, except Leverett. Prof. Andrews' Lexicon is a vast advance upon either of these, and is beyond all comparison the best for the present student. There is no other Latin Lexicon which we should recommend to him. It contains all the substance and much of the detail of the vast and conscientious learning and labor of Freund, judiciously condensed; and the prominent, heavy-faced type of the vocabulary words and directing figures is a most convenient guide to the eye of the consulter.

A Copious and Critical English-Latin Lexicon, founded on the Dictionary of Dr. GEORGES. By RIDDLE and ARNOLD. First American edition, revised by CHARLES ANTHON. New York: Harper & Brothers. Imp. 8vo., pp. 753.

It is impossible to be a really good Latin scholar without being able to speak and write decent Latin. It is only within a few years that this department of the study, formerly so predominant, has a little been revived in some American colleges. The wretched English-Latin department of Ainsworth, reprinted by Leverett, furnished the only and inadequate vocabulary. The present work is the joint result of first-class scholars of three nations. It will be found an indispensable assistant in the study of Latin.

A Classical Dictionary; containing an account of the principal proper names mentioned in ancient authors. Together with an account of coins, weights, and measures. By CHARLES ANTHON. New York: Harper & Brothers. 1859. Roy. 8vo., pp. 1451.

The standard work of its class for the American student. Prof. Anthon's reputation for faithfulness and ability is too high to be increased by our praise. This fourth edition testifies to his standing with the public. This volume belongs to the apparatus of reference, without which the student, confined to his dry text and drier grammar, will gain but a scant and unsymmetrical measure of learning. It is preceded by a useful list of authorities used in compiling it.

A Dictionary of Greek and Roman Antiquities. Edited by WILLIAM SMITH. Third American edition, revised by CHARLES ANTHON. New York: Harper & Brothers. Roy. 8vo., pp. 1124.

The work of Smith is of established reputation, and is here variously improved in arrangement and increased in materials, for the better accommodation of the American scholar. As thus edited, it belongs to the same group of necessary reference-books as the Classical Dictionary noticed above, and the Geography noticed below.

A System of Ancient and Medieval Geography, for the Use of Schools and Colleges. By CHARLES ANTHON. New York: Harper & Brothers. 1855. 8vo., pp. 789.

As the author remarks in his preface, ancient history and ancient geography

ought always to be studied together. This volume is an ample manual for all the purposes of American school and collegiate students. It is also a reference-book of great value to the general reader. Like the author's *Classical Dictionary*, it contains a convenient list of authorities on the subject.

The Grammar of English Grammars. By GOULD BROWN. Second edition, revised and enlarged. New York: S. S. and W. Wood. 1857. Roy. 8vo., pp. 1070.

This great monument of the author's industry contains his theory of English grammar, worked out into most full and conscientious detail, and with such numerous references to authorities, and to other grammatical writers, as render it, in addition, a remarkably useful storehouse of materials for opinions on the subject. It contains a good list of writers on English Grammar.

Mathematical Dictionary and Cyclopædia of Mathematical Science. By CHARLES DAVIES and WILLIAM G. PECK. New York: A. S. Barnes and Burr. 1859. 8vo., pp. 592.

A valuable and comprehensive compendium for students. It will be found still more convenient, as a book of reference, by those who may feel an occasional desire to refresh or correct half-forgotten studies. The definitions and descriptions are remarkably clear; and the mathematical processes quite sufficient in extent for the purposes of the work.

The American Farmer's Encyclopædia; being a complete Guide for the Cultivation of every variety of Garden and Field Crops. By GOUVERNEUR EMMERSON. New York: A. O. Moore. 1858. Roy. 8vo., pp. 1179.

An extensive collection of information on agricultural topics. It contains very much that ought to interest and aid every farmer.

A Classical Atlas, to Illustrate Ancient Geography. By ALEXANDER G. FINDLAY. New York: Harper & Brothers.

Twenty-five good maps and an extensive index of geographical names. It is as gross an error to study ancient history or the classics without constantly consulting a work of this nature, as it would be to study modern geography without maps.

Other American Reference Books, heretofore noticed in this Journal, are as follows:—the volume and page of the notices being given with it.

Complete Pronouncing Gazetteer. By J. THOMAS, T. BALDWIN, and others. Vol. II., p. 739.

Appleton's Cyclopædia of Biography. Do.

English-Grammar. By W. C. FOWLER. Do.

The Microscope, and its Revelations. By W. B. CARPENTER. Do.

Atlas of Classical Geography. By W. HUGHES. Edited by GEORGE LONG. Do.

Geography of Nature. By VULLIET. Translated from French. Do., p. 740.

Treatise on English Punctuation. By JOHN WILSON. Do., p. 741.

Historical Atlas. By J. E. WORCESTER. Do., p. 745.

Cyclopædia of American Literature. By E. A. and G. L. DUYCKINCK. Do., p. 746.

Dictionary of Medical Science. By R. DUNGLISON. Do., p. 320.

American Educational Year-Book. Vol. IV., p. 832.

American Eloquence. By FRANK MOORE. Do.

Cleveland's Compendium of American Literature. Vol. V., p. 318.

Of books on educational history, theory, or art, published during 1859, we have the following. It is not improbable that others have failed to reach us.

Pestalozzi and Pestalozzianism. By HENRY BARNARD. New York: F. C. Brownell. 8vo., pp. 238 and 230.

Educational Biography. Part I. Memoirs of Teachers and Educators. Vol. I. United States. By HENRY BARNARD. New York: F. C. Brownell. 8vo., pp. 524.

Higher Christian Education. By BENJAMIN W. DWIGHT. New York: A. S. Barnes & Burr. 12mo., pp. 347.

Works of Philip Lindsay, D. D. Vol. I. Educational Discourses. Philadelphia: J. B. Lippincott & Co. 8vo., pp. 588.

Jubilee at MOUNT ST. MARY'S, Emmetsburgh, Md., Oct. 6, 1858. New York: Dunigan & Brother. 12mo., pp. 288.

The Teacher's Assistant; or, Hints and Methods in School Discipline and Instruction. By CHARLES NOETHEND. Boston: Crosby, Nichols & Co. 12mo., pp. 358.

Lectures on Mental and Moral Culture. By SAMUEL P. BATES. New York: A. S. Barnes & Burr. 12mo., pp. 319.

History and Progress of Education By PHILOBIUS. With Introduction by HENRY BARNARD. New York: A. S. Barnes & Burr. 12mo., pp. 310.

The Normal; or, Methods of Teaching the Common Branches. By ALFRED HOLBROOK. New York: A. S. Barnes & Burr. 12mo., pp. 456.

Hours with my Pupils. By MRS. LINCOLN PHELPS. New York: C. Scribner. 12mo., pp. 263.

School Amusements; or, How to make the School Interesting. By N. W. TAYLOR ROOT. New York: A. S. Barnes & Burr. 12mo., pp. 225.

We do not pretend to make an accurate comparison between the two years thus selected, on account of the labor and detail of estimating the very extensive variety of public and institutional reports and other documents, which should, strictly, be included. But the following summaries are certainly within the truth, viz:—

Books, twelve; public documents, say ten volumes; journals, each a volume a year, at least twenty. Total, in 1859, forty-two, against three; a fourteen-fold increase in twenty-five years.

The following works, though not falling within the class of those above mentioned, may be named here, for the sake of information, as useful recent educational publications.

Art of Extempore Speaking. By M. BAUTAIN. Translated from French, and with additions by a member of the New York Bar. New York: Scribner. 1859. 12mo., 364 pages.

The Microscopist's Companion; with a Glossary of Microscopic Terms. By JOHN KING, M. D. Cincinnati: Rickey, Mallory & Co. 1859. 8vo., 308 pages.

Biography of Samuel Lewis. By Wm. G. W. LEWIS. Cincinnati: Methodist Book Concern. 1857. 12mo., 429 pages.

Memoir of the Life of Daniel Drake, M. D. By E. D. MANSFIELD. Cincinnati: Applegate & Co. 1855. 12mo., 408 pages.

XX. EDUCATIONAL LITERATURE.

THE progress of education in this country, and the increase of popular interest in it, are strikingly and unerringly shown by the remarkable and rapid increase in the number of publications (not including text-books) on the subject. This appears from the contrast between the educational publications of a year, a quarter of a century ago, and those of the year 1859, just closed.

In the former year was published one single educational journal, the "*Annals of Education*;" a valuable work, but maintained not by its subscribers, but by the pecuniary and personal sacrifices of a few disinterested friends of education.

No volume on education was published, except the annual volume of collected lectures issued by the American Institute of Instruction.

At that time, instead of a State Department, with a superintendent of schools at its head, such as now exists in almost every state in the Union, there was no such department or office, except in a few states a nominal one, annexed to some other department of the government.

There were but a few states where any annual public document of any kind referred to the schools; and, in most of these, some financial officers merely registered and reported the yearly appropriations and necessary statistics. In Massachusetts, for instance, the secretary of state reported school statistics. In Connecticut, the commissioner of the school fund did the same, in reporting on the state and use of the fund; and similar ex-officio statements were given in Virginia. The first report on Pennsylvania schools, in that year, was two pages of mere announcements. In New York alone the secretary of state published yearly an able and valuable report upon the condition and needs of the schools.

Except in New York, there were not educational documents in any proper sense of the word; and we may thus state the total number of educational publications, except occasional addresses, &c., in 1834, as one periodical, one volume of lectures, and one public document; total, three.

Now observe the change. During 1859, educational monthlies, of octavo size, and each forming an annual volume of considerable thickness, have been published in eighteen of the states, nearly all of them being on a permanent basis; and in several of the states one, two, or more additional ones are also published.

The public documents of the various states for that year would, all together, constitute ten or twelve large 8vo. volumes. The annual report on schools of Pennsylvania, for instance, is of more than 300 pages; that of Illinois, (a biennial report, however,) of 423 pages; and with these should be, at least, mentioned the numerous and valuable reports published by the school authorities of Boston, New York, and many other cities.

But the extent of the matter thus published is not its greatest merit. These different series of publications contain very much valuable discussion of educational principles and practice, by the best and most competent minds of the different states; and great masses of various and carefully-prepared statistics, bearing upon the subject.

CIRCULAR.

I commenced the publication of the "*American Journal of Education*," in 1855, from the belief that such a Periodical, national and catholic in aim and spirit, of sufficient extent to admit, in each issue, of full discussions of the History, Biography, Art, and Science of Education, and of the organization, administration, and statistics of its Institutions and Systems, was desirable and even necessary as a means of establishing the foundation and shaping the superstructure of our American civilization.

It was not commenced as an individual enterprise until efforts had been made, during several years, first to induce state and national educational bodies to undertake it, and then to enlist the co-operation of individual educators and public-spirited citizens. It was never supposed that the work would be a source of profit; but the first number was not issued without counting the cost, nor without fixing a period during which the undertaking would be carried on single-handed, if necessary. This period was five of the best years of my life; which I was from the first prepared to give to the work, without the slightest expectation of receiving any compensation for time or editorial services.

The first year's experience convinced me that but a very small proportion of those engaged in teaching either high or elementary schools, or in administering state or city systems, or of professed friends of popular education, would labor, spend, or even subscribe for a work of this character; and indeed that the regular subscription list would not meet the expense of printing and paper. But, in the hope that the completed series of volumes would be regarded as a valuable contribution to the permanent educational literature of the country, I have still gone forward, notwithstanding a formidable and increasing deficit.

I am still so reluctant to relinquish an enterprise carried so far, and for which I have sacrificed so much, that I have concluded to make one more appeal, to personal friends, professional teachers, and educational laborers, for their new or renewed subscriptions to the *Journal*, to enable me to add at least three more volumes to the series.

I wish particularly to embrace in these three volumes a large amount of material illustrative of

I. The history and present condition of Normal Schools and other Special Institutions and Agencies for the Professional Training and Improvement of Teachers.

II. The organization and characteristic features of Polytechnic Schools, and other institutions for the education of persons destined for other pursuits than those of Law, Medicine, and Theology.

III. The history and courses of instruction of the oldest and most flourishing Colleges and Universities in Europe and America.

IV. The most recent as well as the oldest successful Methods of Teaching the elementary and the higher branches of learning.

V. The life and services of many Teachers and Promoters of Education, whose labors or benefactions are associated with the foundation and development of institutions, systems, and methods of instruction.

HENRY BARNARD,

Editor and Proprietor of the American Journal of Education.

HARTFORD, CONN.,

January 18th, 1860.

BARNARD'S EDUCATIONAL WORKS.

F. B. PERKINS, of Hartford, Conn., and F. C. BROWNELL, (No. 12, Appleton's Building,) New York, will supply the trade or individuals with the following recent publications by Hon. HENRY BARNARD, LL.D.

PESTALOZZI AND PESTALOZZIANISM.

A MEMOIR OF JOHN HENRY PESTALOZZI, with selections from his Educational publications; together with Biographical Sketches of several of his Assistants and Disciples, with a portrait of Pestalozzi. 480 pages. Price per copy \$2, strongly sewed, and bound in paper covers; and \$2.50 in half morocco.

This volume gives the fullest account of the life and system of the great Swiss Educator which has appeared in the English language, and the most comprehensive survey of the work done by him and his Assistants and Disciples in all languages.

THE GERMAN UNIVERSITIES.

CONTRIBUTIONS TO THE HISTORY AND IMPROVEMENT OF THE GERMAN UNIVERSITIES. By *Karl von Raumer*. 250 pages. Price \$1.50 per copy, strongly sewed, and bound in neat paper covers; and \$2 bound in half morocco.

This first American Edition of the Fourth volume of Prof. Raumer's elaborate "*History of Pedagogy*" contains a comprehensive survey of the origin and peculiar constitution of the great universities of Germany; a minute and documentary account of the old customs and the modern societies of the students, of the Disputation, Penitentialism, Nationalism, and the Burschenschaften; the Wartburg Festival, the assassination of Kotzebue, and the execution of Sand; together with a number of Essays on topics connected with college and university improvements, now agitated in this country as well as in Europe.

EDUCATIONAL BIOGRAPHY.

MEMOIRS OF EMINENT TEACHERS, BENEFACTORS, AND PROMOTERS OF EDUCATION, with twenty-one Portraits from engravings on steel by the best artists. 524 pages. Price for the illustrated edition, printed on thick paper, and bound in antique morocco, \$3.50.

REFORMATORY EDUCATION AND INSTITUTIONS.

PAPERS ON PREVENTIVE, CORRECTIONAL, AND REFORMATORY INSTITUTIONS AND AGENCIES, in different countries. 364 pages. Price per copy, bound in paper covers, \$1.25; and in cloth, \$1.50.

This volume contains a minute account of the Mettray Reform Farm School, (*Colonie Agricole et Penitentiaire*), founded by Demetz, in France; of the Rough House (*Rauhe Haus*), at Horn, near Hamburg; of the Reformatory Institution at Ruysselede, in Belgium; of the Red Hill, the Red Lodge, and Hardwicke Reformatories in England; with a comprehensive and practical survey of this class of schools and agencies in other countries.

TRIBUTE TO GALLAUDET.

A MEMOIR OF THOMAS HOPKINS GALLAUDET, with a History of Deaf Mute Instruction, and account of the American Asylum for the Deaf and Dumb in Hartford; with a Portrait and Selections from the Writings of Dr. Gallaudet. SECOND EDITION. 224 pages. Price per copy, bound in cloth, \$1.50.

THE AMERICAN JOURNAL OF EDUCATION.

The first Series of this "Encyclopedia of Education," embracing five volumes, each containing on an average over 800 pages, with thirty portraits of eminent teachers, educators, and benefactors of education, literature, and science, can now be furnished for \$12.50 bound in cloth, and \$15 bound in half calf or morocco.

SUBSCRIPTION to the same, for the year 1859, embracing four numbers, or two volumes, of 624 pages each, with ten portraits, from engravings on steel by the best artists, \$4, payable in advance.

BARNARD'S "SCHOOL ARCHITECTURE," AND "NATIONAL EDUCATION IN EUROPE," will be furnished—the former for \$2, and the latter for \$3, per copy.

No. 22 & No. 1 of Vol. IX, will be published on the 12th of September, 1906.

BARNARD'S AMERICAN JOURNAL OF EDUCATION.

THE following circular is addressed in answer to numerous inquiries on one or more of the points briefly treated of.

SPECIMEN NUMBERS. To persons applying for specimen numbers of *Barnard's American Journal of Education*, with a view of becoming subscribers, a copy of the last number issued will be mailed, on receipt of seventy-five cents, half the price at which single numbers are sold, and twelve cents in stamps for prepayment of postage, at the office of publication:

POSTAGE. The law applicable to postage on this quarterly periodical is as follows: "For each periodical, not exceeding three ounces in weight, to any part of the United States, one cent; for every additional ounce or fraction of an ounce, one cent. If paid quarterly or yearly in advance, at the office where the same is either mailed or delivered, then half the above rates are charged." The weight of each number of this Journal is from thirteen to seventeen ounces; making full postage from eleven to fifteen cents per number, or from forty-four to sixty cents a year; and postage paid in advance, at either end of the route, six to eight cents a number, or from twenty-two to thirty cents a year.

MAILING. The numbers of the Journal—done up in single wrapper of stout post-office paper, and, when addressed beyond New England and New York, tied up with strong twine—are mailed to the post-office address of each subscriber who has paid up his subscription for the year, on or before the day of publication of each number, viz., the 15th of March, June, September, and December. If a number does not reach its destination in due time, the fault is not with this office.

EXCHANGES. The publisher looks for the usual courtesy of a notice of the reception, and a specification at least of the *subjects of the several articles*, from those journals which have solicited an exchange; and an omission of this courtesy is supposed to indicate that no further exchange is desired.

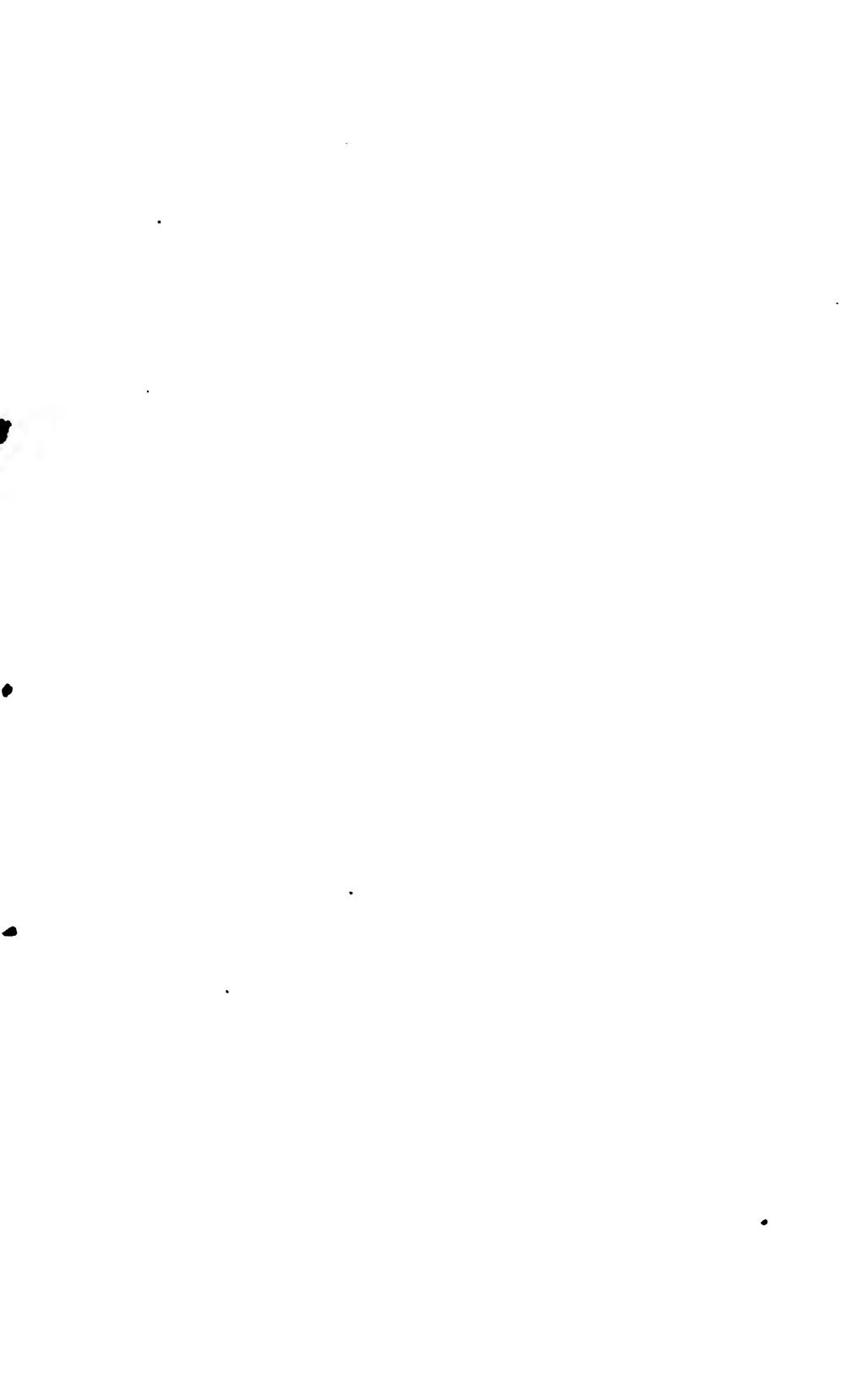
THE FIRST SERIES. A general index (*sixty-four pages, nonpareil, double columns*), of the topics treated of in the first five volumes of the Journal, will be sent, free of expense, to the address of any person making application for the same.

MEMOIR OF PESTALOZZI, AND RAUMER'S GERMAN UNIVERSITIES. Subscribers and purchasers of complete sets of the *American Journal of Education* are advised, that nearly all of the contents of these separate works have been, or will be, embraced as articles in the Journal; and that, unless they wish to have them in a compact and convenient form, they need not purchase them.

FREDERIC B. PERKINS,

Publisher of Barnard's American Journal of Education.

Hartford, Conn., June 1, 1859.





L. P. P. P.
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L. JOHN GRISCOM.*

JOHN GRISCOM, long a most successful and useful teacher and school-officer, and extensively interested and influential in the improvements in education, and in juvenile reform, of the last half-century, was descended from Quaker forefathers, of whom the first emigrants to America were among the earliest settlers of Philadelphia. He was born at Hancock's Bridge, near Salem, N. J., where his parents were living, Sept. 27th, 1774.

Young Griscom learned his alphabet without books, from his father, who, while working at his trade of saddlery, taught him partly by the help of the makers' names stamped on his tools. This primitive instruction was succeeded by the common country schooling of the period, in the log school-house of the district, under a bewildering succession of teachers; with one of whom, a Hungarian, who had come over as a Hessian soldier, he commenced studying Latin, and learned a few words of French. His first "reading-book" was an *Æsop*, with cuts, whose fables and pictures, and some of the "morals" too, made lasting impression upon his mind.

In an autobiography, which furnishes some of the most interesting materials of the memoir by his son, Prof. Griscom thus describes his first experiment as a teacher:—

"In the year 1791, or the fall of 1790, at the age of seventeen, I was applied to by some of our neighbors to open a school for the instruction of their children. This mark of confidence was the result of some little reputation for steadiness of deportment, and a love of learning rather superior to the other youths of the vicinage. 'Twas certain I could write and cipher too;' but in reality, as to my penmanship, although it might have been superior to that of Napoleon Bonaparte, it was very awkward and clumsy, for I had never had a teacher who had inspired me with any ambition to acquire a good hand. I had ciphered nearly through Dilworth's Assistant, and was considered rather more ready in 'doing sums' than most of my school-mates; but as to any knowledge of the principles on which the different rules are constructed, neither myself nor any of my teachers, as I apprehend, ever had the curiosity or ambition to attain to it."

* The present article is chiefly compiled or extracted from the interesting "*Memoir of John Griscom*." N. Y., 1869: Carter & Brothers. 8vo., pp. 427. By his son, John H. Griscom, M. D. A volume admirably adapted to School Libraries.

"As my father had a claim upon my services at this age, I readily agreed to share with him the profits of the school. The price fixed upon per quarter for each pupil was a French crown, or eight shillings and four pence, Jersey currency. The place of this my *début* in the art of pedagogy was a log school-house on Mannington Hill, about three miles from the town of Salem, on the Philadelphia road, and one and a half miles from our residence. I found upon trial that my new employment was more easy, and more to my taste, than the hard work upon the farm; and I could scarcely refrain from considering myself a little more elevated in the scale of operative employment than the common day-laborer, or the farmer's son, who thinks only of working at the soil. My father's views, however, of the virtue of industry rendered it necessary for me to employ the long mornings of summer, before breakfast, in active labor on the farm, as usual, and again in the evening, after the school had closed. But to rise with, or before, the dawn, to work hard till eight o'clock, and then walk one and a half miles, seemed to me rather lessening to the dignity of my new sphere; and it was not until after some little altercation with my father on this point that he relinquished his claim, and allowed me to pursue my own inclinations."

The success of this undertaking, and the congeniality of the employment, induced young Griscom to adopt instruction as his future profession; and with a view to render himself fitter for it, he entered, in 1793, the "Friends' Academy" at Philadelphia, a school founded by William Penn, and then taught by William Waring, a good mathematician. Here the young man studied diligently mathematics, and his favorite modern language, French. But the yellow fever soon drove him away, breaking up the school, and carrying off the teacher. In the healthy air of his country home he however soon recovered, taught school during the next winter with marked success, and in the spring was strongly urged to accept the charge of two different schools in New Jersey. After personal examination, he decided to accept the application from Burlington, with a guaranteed salary of £100, Pennsylvania currency, (\$226 $\frac{1}{2}$), his board being offered him at 10s. 6d. (\$1.40) a week. The school was not in a prosperous state, and he opened it with but three scholars. For this scanty attendance he thus accounts:—

"Brought up altogether in the country, (except during the four months spent in Philadelphia as a recluse student,) I had had very few social advantages, and my appearance and manners were obviously those of a rustic youth, uninitiated in the polished forms of society. Burlington had been distinguished, from its early settlement, as the abode of several of the higher class of British emigrants,

and for the respectability and polish of its more wealthy inhabitants. For such a youth as myself to assume the office of teacher, with very slender advantages of preparatory education, in such a place, was, in some measure, to plunge into a current whose swiftness and eddies exposed me to no little hazard. I was more closely scrutinized than I ever had been before; and, no doubt, the rusticity of my dress and manners caused a suspension of opinion, with respect to the expediency of patronizing the school, on the part of many of the inhabitants. At the close of the first year, the tuition-fees" (the rate of teaching being 17s. 6d. per quarter) "fell somewhat short of the proffered amount, and the deficiency was paid me by the treasurer. After that it was independent of the treasury as long as I remained in Burlington."

Under the judicious management of the rustic young teacher, however, the institution soon began to improve. The autobiography then refers to the views and principles of the young principal, and to the prevailing opinions on educational subjects.

"The school continued to prosper. In about three months after the commencement, the number of scholars was thirty-five. The occupation, I may say, was not uncongenial to my taste; but I felt, almost continually, that education, as an art and still more as a science, was in its infancy; or, perhaps, to speak more properly, that, as far as my own skill extended, and my knowledge of other schools enabled me to judge, there was a great want of better rules, and a more enlightened practice. This induced me to change the organization of my school as often as I thought it could be done with advantage, and without incurring the imputation of fickleness; and it induced me to neglect no suitable opportunity of looking into other schools, and obtaining useful hints for the exercise of my own discipline and modes of instruction. Happy indeed should I have thought myself, had there been, during my residence in Burlington, that general or public concern for the improvement of schools which characterizes the present age. The numerous valuable publications which now facilitate the duties of the teacher, not only by smoothing the way to learning, but by teaching him how to teach and to govern, would have been hailed as invaluable auxiliaries. I was ever on the look-out for books and publications which might throw light upon my path, and availed myself of some access, through a friend, to the Philadelphia Library for that purpose. Those means of government, which may be justly styled *moral*, in contradistinction to *physical*, or the discipline of *fear*, are now so much better understood and practiced than they were twenty-five years ago, that there is far less excuse for the severe exercise of the rod than at a time when the

general impression was that compulsion should be promptly resorted to in all ordinary cases of neglect or obstinacy.

"Fondness for children is a sentiment which I believe exists in my nature; and very dear to me were those of my pupils whose disposition and habits commended them to my esteem; but I am now satisfied that I was scarcely ever *sufficiently* aware of the value and importance of *love* as a Christian duty on the part of teachers. I do not know that I can accuse myself of any positive violation of it. I am not aware that I ever inflicted chastisement of any kind but with a view to its corrective and ameliorating influence. It is very possible that irritated feeling may have interfered, and partly influenced my corrections in various instances. The motive, as far as I remember, was always the desire to benefit, first, the pupil, and, second, the school, by sustaining the authority which I consider to be essential to good discipline; but I now believe that, in common with most of my fellow-teachers and cotemporaries, I did not justly and fully appreciate the potentiality of Christian love, nor study its resources in the development of means for overcoming evil, and alluring into the paths of virtuous obedience the perverse and refractory minds of children. I have, indeed, so far succeeded in this kind of influence as to have no occasion for striking a blow for three months at a time, in a large school of boys. I would not insist on the formal proscription of corporeal punishment in a large school, and especially a day school. In the latter, teachers have not always *time* to apply the whole force of moral suasion; and there may be cases in which some prompt remedial or punitive process seems absolutely necessary, both for the welfare of the offending subject and that of the school."

Mr. Griscom, now firmly established in his profession, married, in 1800, a daughter of John Hoskins, an excellent man, and leading member of the Friends' denomination; the trustees of the school furnished a house for his residence, which was soon filled with boarders; and until the spring of 1807 he continued at Burlington, working hard in the school, yet finding time to lay out and cultivate a large garden, and to accomplish a considerable share of miscellaneous reading, of the solid and useful kind, which he almost exclusively preferred. So decided and comprehensive was his opposition to fictitious literature, that he was clearly of opinion that Scott's novels did more harm than good; that, "as the most dignified and powerful supporter of public dramatic exhibitions, Shakspeare is to be regarded as a prince of mischief;" and that his writings, "taken in their totality, demoralize society to a great extent."

During his stay in Burlington, Mr. Griscom organized a reading-club, which included Elias Boudinot, Dr. C. H. Wharton, Wm. Coxe,

Joshua M. Wallace, and several others; which subscribed to a number of the best English scientific and literary periodicals, and existed, with advantage to its members, for several years.

Mr. Griscom had always been interested in natural philosophy; and, while at Burlington, procured an air-pump and some other apparatus, which he used with much pleasure. Being eager to master the subject of chemistry, he endeavored in vain to do so with the help of Henry's Epitome, but gave it up in despair. A little afterward, however, a friend lent him a translation of Lavoisier's Chemistry, which he read and comprehended with delight, sent to England for some apparatus, attended a lecture by Prof. Woodhouse, at Philadelphia, became acquainted with him, and very soon, receiving his apparatus and more books from England, fitted up a laboratory in his house, and worked in it with great enjoyment, instructing his advanced pupils in the study, for the first time in any public school in that part of the United States. So great was his success as an experimenter that, in the autumn of 1806, he delivered, in his school-room, a successful course of public lectures on chemistry.

The restriction of his school at Burlington to Friends' children only, was now felt as a narrow limitation to his prospects and efforts; and the charge of the boarding-house and of his own increasing family began to be too burdensome to Mrs. Griscom. Receiving, therefore, an offer from friends in New York city, he closed the school at Burlington, in March, 1807, and removed to New York, having a guaranteed income of \$2,250 for his first year's services as a teacher, besides a school-room.

In this new situation, Mr. Griscom's success was better than he had expected. During the next winter he gave a very successful course of chemical lectures, with experiments. This was the first attempt of any importance to furnish popular information in this department of science, with the exception of some courses of private lectures on philosophy and chemistry by George Chilton, father of the well-known chemist, James R. Chilton, M. D.

Several of the gentlemen who had guaranteed his salary failed during the winter of 1807-8; and, being unable to renew their engagement for the next year, Mr. Griscom leased a lot of land on Little Green street, and erected a school-house for himself—"a substantial brick building, 30 by 40 feet, two stories high, with an arched ceiling, and a small observatory on the top—at a cost of \$2,525. The upper room was designed for the double purpose of a school-room and a lecture-room—a furnace with separate flues, a pneumatic trough, with jars, boxes, tables, &c., being supplied for the latter purpose. A prospectus of this institution was issued; and, in December, 1808, it

was opened by an introductory lecture, with a very flattering attendance and prospects of success. A number of medical acquaintance gave him their countenance, and the undertaking thus made to erect a private school of physical and experimental science, independent of any corporate body, or collegiate institution, proved eventually a substantial and important one in many respects."

Mr. Griscom's own labors in this school covered the period from 1808 to that of his departure for Europe, in 1818. The school was in two departments—male and female—each under an assistant. One of his most efficient assistants was Goold Brown, the well-known grammarian. During all this period, Mr. Griscom was exceedingly active, not only in his place as principal, but in pushing his own studies in natural science, especially in chemistry, and in preparing and delivering the numerous courses of lectures which were so long a popular institution in New York. These were rendered more valuable and interesting by the uncommonly complete apparatus used in experimenting.

In January, 1812, Mr. Griscom received the appointment of professor of chemistry in the medical school established by Dr. Romayne and others, as the medical faculty of Queen's College, at New Brunswick, in consequence of a secession from the established medical school at New York, under the regents of the university. Prof. Griscom lectured under this appointment until the dissolution of the school.

Mrs. Griscom died, of puerperal fever, April 3d, 1816, leaving her husband very desolate, and with a large family of eight young children. During a year or two subsequent to this bereavement, Prof. Griscom, finding his health somewhat failing under the pressure of his occupations, left his school more to the care of his very competent assistants, and devoted himself more to his favorite pursuit of lecturing on natural science. His son thus gracefully describes the character of these lectures, delivered in the "Old Alms House" building, then extending across the north end of the Park, along Chambers street.

"In apartments in this building, Prof. Griscom continued for a long series of years to impart to large popular audiences, with the aid of, probably, the most extensive and costly apparatus and cabinet then owned in this country, instruction in Chemistry, Natural Philosophy, Astronomy, Mineralogy, etc. Special audiences were gotten up, from time to time, from various classes of society. Merchants, mechanics, apprentices, professional men, females—each, as the proposals were made to them, contributed to fill his benches, and swell the tide of popularity with which his efforts to extend the benefits of sci-

entific knowledge among the masses were hailed. To enhance the gratification of his audiences, and the pleasure with which his appearance in the lecture-room was always greeted, his effective, though easy, colloquial style of delivery, and the evident satisfaction with which he himself always enjoyed the surprise of his auditory at each striking experiment, contributed not a little. As far as possible, every statement of a scientific fact was illustrated by an experiment, with a tact and success rarely surpassed, to which his genial and benevolent smile lent an additional grace.

"In the gracefully flowing stanzas of "Fanny," Fitz Green Halleck has commemorated the scene, and something of the character, of these popular philosophic reunions:—

"And, therefore, I am silent. It remains
To bless the hour the Corporation took it
Into their heads to give the rich in brains
The worn-out mansion of the poor in pocket,
Once "The Old Alma House," now a school of wisdom,
Sacred to Scudder's shells and Dr. Griscom.

* * * * *

She was among the first and warmest patrons
Of Griscom's *conversations*, where,
In rainbow groups, our bright-eyed maids and matrons,
On Science bent, assemble—to prepare
Themselves for acting well, in life, their part
As wives and mothers. There she learned by heart

Words to the witches in Macbeth unknown—
Hydraulics, Hydrostatics, and Pneumatics,
Dioptrics, Optics, Katoptrics, Carbon,
Chlorine, and Iodine, and Ærestatics;
Also—why frogs, for want of air, expire;
And how to set the Tappan sea on fire.' "

We add to this testimony the spirited description of Prof. Griscom's manner and success in lecturing, given by that well-known veteran physician and genial remembrancer in local history and biography, John W. Francis, M. D., in his *Introductory Discourse*, at Bellevue Hospital, Oct. 18, 1858.

"In 1807, Griscom chose New York as the theater of his action; and in the fall of that year received such countenance that he opened a course of public teaching in chemical philosophy. His success was so great that he prepared for a more extensive demonstration of his peculiar talents. He now erected a large lecture-room in Little Green street; imported ample apparatus from Allen, of London; and, at the commencement of the winter-session of 1808, his projected winter-course was listened to by an audience such as had never before

assembled for a like purpose in New York. His opening address was a triumph. The leading teachers of divers seminaries were present; the professors of the rival schools of physic were there congregated; and Hosack and Miller, Seaman and Bruce, with Dewitt, I remember to have seen listening to the conscientious instructor with delight. He had great simplicity and clearness in diction. Such an auditory was competent authority to give renown to his maiden effort; he was at once pronounced a man of acquirements, and an able and lucid teacher. It was apparent that he had chosen a theme congenial with his mental reflections; that chemistry was that branch of science which to him had special charms above other departments of physical study. The nitrous oxide of Davy, moreover, had now become a topic of popular consideration, and many, doubtless, crowded the lecture-room to witness its extraordinary influence, who otherwise before might have had little desire to encounter the intricacies of chemical investigation. For thirty years Dr. Griscom was the acknowledged head of all other teachers of chemistry among us, and its great expositor. Benjamin Dewitt, a scholar and a man of superior talents, was, indeed, at the time of Dr. Griscom's first essay, a professor of the same branch in the newly-created College of Physicians and Surgeons, but a marvelous indolence seemed to obtain a mastery over him. As a colleague in Rutgers' Medical College, I know that Dr. Griscom's teachings, and his experiments, were appreciated at no common estimate, both by the professors and by the classes.

"It deserves to be stated, that this conscientious professor kept pace with the flood of light which Davy, Murray, Gay Lussac, and Thenard, and others, shed on the progress of chemical philosophy at that day; and that the vexed questions on chlorine, the compound nature of muriatic acid, the Bakerian lectures, and the many other novelties which the new nomenclature of the time introduced, received from Dr. Griscom that attention which his pledges to his students, and his honest purposes through life, imposed on his labors. He had the satisfaction to see the rewards of his great toil in the progress of the science among us. His calm spirit, his deliberate and grave utterance, his exact diction, the simplicity of his manner, and his unostentatious life, were the characteristics which marked him. In brief, he had an easy and manly rhetoric, and he evinced a clear and distinct comprehension. He was incapable of any ungenerous sentiment, and was cherished with regard by every order of students."

Prof. Griscom had long frequently spent his summer vacations in journeys in various parts of his own country, which he greatly enjoyed, and was accustomed to use in extending his topographical and mineralogical knowledge, and to record briefly in a diary. His

health continuing to fail, his physicians and friends advised him to make a voyage to Europe.

It was a serious matter to separate himself, for so long a time as this would require, from a family of eight children, (the oldest but 17;) but it was happily in his power to leave them comfortably provided for, with judicious relatives, (such as were of proper age, at boarding-school;) and after reflection on the proposition, with the solemnity which it properly demanded, and having the consent of his family, and leaving his school under the care of his assistants, he concluded to accede to it. He sailed about the first of April, and landed in Liverpool on the first of May. His tour embraced England, France, Switzerland, the northern part of Italy, Belgium, Holland, Scotland, and Ireland. Perhaps few, if any, similar journeys have been undertaken, either before or since, which had precisely the same objects in view. The matters which claimed his attention varied materially from those which, in general, are most attractive to strangers and travelers. Instead of theaters, ball-rooms, dinner-parties, and spectacles of amusement, his desire was to study the prisons, hospitals, manufactories, and institutions of learning and charity. Instead of nobles, statesmen, political leaders, eminent actors, and cantatrices, he was more anxious to become acquainted with persons eminent in literature or science, or in works of philanthropy. Morals and religion were topics at all times interesting to him; and, regarding public institutions as among the most intelligible evidences of the genius and character of the people, these engaged his attention primarily.

Few persons of renown in the world of science, literature, or philanthropy, who were within his reach, but contributed to the pleasure and usefulness of his tour; and many of the benevolent and literary institutions which he inspected furnished him with hints for the subsequent improvement of those of similar character in his own land.

According to his almost invariable custom when traveling, determined by a sense of duty to those left at home, notes were taken of every thing of interest; the writing out of which, in full, occupied much of his time after his return. The result was an extended and minute journal, which was published under the title of "*A Year in Europe.*"

This work is now out of print. It was extensively popular, two editions of it having been sold, and its profits covered the expenses of the journey. It contains a singularly judicious and interesting account of life and manners abroad, and especially of numerous institutions which Prof. Griscom so assiduously visited, as they existed at that day. The space available for this article will not, however, allow us to give any extracts from the book. He arrived at New York, on

his return, June 8th, 1819, bringing an inexhaustible fund of pleasant recollections and valuable information, and having become acquainted with a large number of eminent literati, philanthropists, and men of science, with many of whom he afterward corresponded.

Prof. Griscom, not content with individual studies in science, had already become, in 1814, an original corporator of the Literary and Philanthropic Society of New York, of which DeWitt Clinton was president. He was an active member and officer of this society, and a contributor to its publications. Nor was his attention confined merely to his own occupations and to the cause of science.

"Prior to his departure for Europe, in the midst of his engagements in his flourishing school, his scientific studies, and his numerous lectures, he yet found time for the consideration of the welfare of his fellow-creatures in other respects. The subject of *Pauperism*, its rapid and alarming increase, and its numerous causes, became frequent topics of conversation between him and some of his friends. Not content with simply discussing this difficult question in private, it was resolved to attempt the solution of the still more difficult problem of its possible retardation. For the more efficient accomplishment of this purpose, it was determined to form an association; and in the private parlor of the quaint tenement occupied by John Griscom, in William street, was germinated the *Society for the Prevention of Pauperism*; which, though destined itself to a brief existence, proved to be the mother of one of the noblest, as it has grown to be one of the most important and essential, of the philanthropic institutions of modern times. The personal friends most active with him in the establishment of this society were Thomas Eddy and John Pintard, under whose influence a considerable number of distinguished citizens united for the advancement of its objects.

The society was publicly organized on the 16th of December, 1817, at the New York Hospital, at a meeting of which Gen. Mathew Clarkson was chairman, and Divie Bethune, secretary. Immediately after the organization, a committee was appointed "to prepare a constitution, and a statement of the prevailing causes of pauperism, with suggestions relative to the most suitable and efficient remedies." This committee consisted of John Griscom, (chairman,) Brockholst Livingston, Garrett N. Bleecker, Thomas Eddy, James Eastburn, Rev. Cave Jones, Zachariah Lewis, and Divie Bethune.

On the 6th of February following, the report of that committee, from the pen of its chairman, was presented, cordially approved, and one thousand copies ordered to be printed. The constitution defined the objects of the society as follows:

'To investigate the circumstances and habits of the poor; to devise means for improving their situation, both in a physical and moral point of view; to suggest plans for calling into exercise their own endeavors, and afford the means of giving them increased effect; to hold out inducements to economy and saving, from the fruits of their own industry, in the seasons of greater abundance; to discountenance, and, as far as possible, prevent, mendicancy and street begging; and, in fine, to do every thing which may tend to meliorate their condition, by stimulating their industry and exciting their own energies.'

The "Report" was a *résumé* of the causes of, and remedies for, pauperism; of which the following is a synopsis: The causes were stated to be, 1st. *Ignorance*. 2d. *Idleness*. 3d. *Intemperance in Drinking*. 4th. *Want of Economy*. 5th. *Imprudent and Hasty Marriages*. 6th. *Lotteries*. 7th. *Pawnbrokers*. 8th. *Houses of Ill-Fame*. 9th. *The numerous charitable institutions of the city*. 10th. *War*, "during its prevalence one of the most abundant sources of poverty and vice."

These were commented and enlarged upon, more or less at length, in a manner which showed how thoroughly the writer had studied both their theory and application. His enumeration of the remedies was equally lucid, and his comments upon them equally cogent. They were as follows: 1st. House to house visitation, by members of the society, the city being divided into small districts for the purpose; to advise the indigent with respect to their business, the education of their children, domestic economy; and, by obtaining their confidence by an open, can-

did, and friendly intercourse with them, to excite them to such a course of conduct as will best promote their physical and moral welfare. 2d. To encourage and assist the laboring classes to promote the establishment of savings-banks, benefit societies, life insurances, etc.* 3d. To prevent the access of paupers not entitled to a residence in the city, which was believed to have been (as now) practiced to no inconsiderable extent. 4th. To unite with the corporate authorities in the entire inhibition of street begging. 5th. To aid in furnishing employment to the poor. 6th. To advise and promote the opening of places of worship, especially in places where licentiousness is most prevalent. The argument on this suggestion was given more in *extenso*, and concluded with this sentence: "Can there be a more painful reflection in the mind of a humane juror, than the thought of consigning to death, or to perpetual exclusion from the enjoyment of virtuous society, a fellow-creature, for crimes that have evidently resulted from that condition of vicious ignorance to which he has ever been exposed, without any attempts on the part of the community to rescue him from it?" 7th. To promote the advancement of Sunday-school instruction, both of children and adults. 8th. To contrive a plan, if possible, by which all the spontaneous charities of the town may flow into one channel, whereby it was believed deception might be prevented, and other indirect evils obviated. 9th. To obtain the abolition of the greater number of shops in which spirituous liquors are sold by license. It was estimated that each of the 1,600 retailers then in the city sold to the amount of at least \$2.50 per day, equal to \$1,460,000 a year; a sum sufficient to build annually *fifty houses of worship*, at \$20,000 each, and leave a surplus more than sufficient to erect school-houses, and provide amply for the education of every child in the city.

This document—which was one of the earliest, if not the first, of the essays at a discussion of the subject of pauperism and its preventives which have appeared in the city of New York—was widely disseminated, and attracted no inconsiderable attention. Its author, a few weeks after its appearance, departed on his visit to Europe, taking with him a few copies, which served him an excellent purpose as an introduction to the society of men eminent in philanthropy, and political and civic economy; and greatly facilitated his access to, and examinations of, eleemosynary and penal institutions, both in Great Britain and on the Continent. It was read with interest by Dr. Thomas Chalmers, who had himself undertaken the immense labor of the district visitation and inspection of the whole city of Glasgow, and whose large work on the "*Civic Economy of Large Towns*" is an honorable monument of his talents, zeal, and industry. In Geneva, our traveler found that a prize had been offered some time before, by the "Economic Society" of that place, for the best essay "On the means of obviating the evils of Pauperism." The prize committee had received twenty-six papers from different places, but had not yet had time to read them all. Professor Pictet, who was one of the committee, on reading this document of the New York Society, was so much pleased with it that he had it immediately translated.

The second annual report of this society, written and presented by John Griscom, in December, 1819, speaks of having obtained a charter for a savings-bank, which commenced operations in July, under its auspices; and also of their successful application to the legislature for a law in relation to lotteries, and much information as to emigrant population and other subjects.

An effort had previously been made (in November, 1816) for the establishment of a savings-bank, by a public meeting called for this special purpose, at which Thomas Eddy presided; when, after a brief and pertinent explanation of the object by James Eastburn, on motion of John Griscom, seconded by Dr. Watts, it was *Resolved*, That it is expedient to establish a savings-bank in the city of New York. A constitution, which was submitted by Zach. Lewis, was unanimously adopted, and a board of twenty-eight directors appointed, with William Bayard for president.

The institution did not, however, commence operations till July 3d, 1819—the *Society for the Prevention of Pauperism* having been in the mean time established, and acted upon this subject—Thomas Eddy, John Murray, Jr., and John Pintard being its warmest and most efficient advocates and promoters. The deposits of the first evening far exceeded in number and amount the most sanguine hopes of the trustees—\$2,807 being received from eighty depositors, in

* It appears that at that time, though Boston, Philadelphia, and Baltimore had each a savings-bank, New York was destitute of that important institution.

sums varying from \$300 to \$2. Of the original body of directors, appointed in 1816, but one now is living—the venerable Najor Taylor, who has continued his connection with the institution to the present date.

The fourth annual report, by John Griscom, was read and accepted in January, 1821. In addition to a careful revision of the usual subjects, it speaks of the formation of the Apprentices' Library, and a collection of five thousand volumes since it commenced in 1819.

The fifth annual report of the society, from the pen of Eleazer Lord, and presented in December, 1821, is a very able one, with much valuable information, and alludes to the Fuel Saving Institution.

Though subsequent a short time to its formal dissolution, yet among the same class of citizens, there was established, in 1825, the "Society for the Encouragement of Faithful Domestic Servants," of which John Griscom was the first president.

The condition of juvenile convicts, and the inevitable ruin which it was perceived awaited them by their incarceration in company with adult criminals, was one of the subjects which early claimed the attention of this society. The autobiography relates that, between himself and his friends, (among whom he especially mentions Isaac Collins,) several conversations occurred on the practicability and means of attempting the establishment of a separate institution for their reception and reformation; and they felt convinced that, if the facts connected with this source of juvenile degradation were fairly and forcibly placed before the view of the citizens generally, there would be found sufficient charity among them to lay the foundation of a separate refuge for all of this class of offenders."

Resuming his place as secretary, and his interest as a member, of the Pauperism Society, on his return home from abroad, his fellow-members were reanimated, on this subject, by the recital of his observations and experience among foreign institutions. The agitation of the very serious question, as to what should and can be done with the rising generation of criminals, now almost wholly abandoned to the unrestrained education in vice and wretchedness, excited the attention alike of magistrates and private citizens. The evils of the then existing system of penitentiary discipline were thoroughly probed and investigated; and, in a few months afterward—viz., on the 29th December, 1819—in the second annual report of the society, allusion was made to the necessity of this reform, under the head of "*The Defects in the Penitentiary System.*"

The friends of reform and prevention among the younger class of convicts and persons morally endangered made persevering efforts to procure some action by the community of New York; but, during several years, could advance no further than to that important but somewhat discouraging preliminary labor of gradually arousing attention and producing conviction. It was but fit that the hand which planted the seed, and nourished the growing plant through every revolving year till it reached maturity, should be the one to gather the ripened fruit. John Griscom, the founder of the society, in 1817, the author of its first paper, and of several of its reports, for six years its secretary, and the original suggester of the necessity of a separate institution, was appropriately delegated by his associates to present the matter directly to his fellow-citizens, by an appeal to their intelli-

gence, to their humanity, and to their liberality. On the 12th of June, 1823, he was appointed chairman of a committee—consisting besides of Isaac Collins, Cornelius Dubois, James W. Gerard, Hiram Ketchum, Daniel Lord, Jun., and Wm. M. Carter—to prepare a document for the presentation of the subject to the public.

In the performance of this duty he took a step in advance of all the previous recommendations—the only one that could meet the full requirements of the case. This was, that the children of neglectful, intemperate, vicious parents, and those which are trained to sin, should be *saved from prison*, even though they may have been guilty of actual crime.

The proposed means of reaching the desired result were thus stated in the committee's appeal:—

“From the exposition thus given of the subjects referred to their consideration, the committee can not but indulge the belief that the inference which will be drawn by every citizen of New York, from the facts now laid before him, will be in perfect accordance with their own—that it is highly expedient that a HOUSE OF REFUGE FOR JUVENILE DELINQUENTS should, as soon as practicable, be established in the immediate vicinity of this city.”

Prof. Griscom's own account of his agency in this undertaking is as follows:—

“On visiting some of the eleemosynary institutions of England, and especially those whose object is to rescue unfortunate and miserable youth from the contaminations to which they are exposed, I felt persuaded, on my return to New York, that an institution was wanting in which juvenile delinquents might be taken care of, and rescued from the inevitable ruin which awaits them when thrown into bridewells and prisons, in company with adult criminals. This subject had claimed the attention of the *Society for the Prevention of Pauperism* in the outset, but nothing had been done. My friend Isaac Collins and myself had several conversations on the practicability and the means of attempting the establishment of a house of refuge for this class of offenders. We both concluded that, if the facts connected with this source of juvenile degradation were fairly and forcibly placed before the view of the citizens generally, there would be found sufficient charity in the city to lay the foundation of such an institution. It was, therefore, laid upon me, pretty urgently, by a few friends, to prepare an essay on the subject, with a view to its being distributed through the city. When finished, the essay was approved by the few; and, being afterward sanctioned at a large though still private meeting, held at the New York Hospital, it was printed in the form of a pamphlet, and a public meeting of citizens was invited

at the large assembly-room of the City Hotel, to decide upon the measures to be adopted. This meeting was largely attended; the pamphlet was read, approved, and ordered to be distributed, and committees appointed, in all the wards of the city, to collect subscriptions for the establishment of a House of Refuge for Juvenile Delinquents. The eventual result of this application to the bounty of the public was a subscription list amounting to about \$17,000. A site was selected, including an arsenal belonging to the United States, on ground which, when relinquished by the government, was to revert to the corporation of the city.* To obtain this relinquishment, I went to Washington, and urged our claim before the authorities there. The object was highly approved, and measures were devised to give up the arsenal for a certain sum to be paid to the government. The good-will of the corporation, with the requisite privilege, was obtained by petition; and the buildings were prepared for the reception of prisoners, and a house for the superintendent and family.

"The institution was opened on the 1st of January, 1825, by an address to those who had assembled for the purpose, by Hugh Maxwell, Esq. Nine subjects were, on that occasion, admitted. The Refuge has since advanced with almost unvarying prosperity. Institutions of a similar character have since been erected in Philadelphia and Boston."

The beneficial effects of the House of Refuge for Juvenile Delinquents were immediate and conspicuous, and are now matter of history, as well as the spread of the system inaugurated by it throughout the United States. We insert, from the proceedings of the Convention of Managers of Houses of Refuge, at New York, May, 1851, the accompanying valuable table, to show the rapid growth of the system, and some of its results.

Prof. Griscom thus states his first conception of the Monitorial High School in New York, the next important enterprise in which he was prominent; and whose origination and progress were, indeed, partly cotemporary with those of the House of Refuge.

"Prior to the opening of the House of Refuge, I had conceived the project of a High School in the city of New York; based upon, and connected with, the intention of rendering the course of instruction at once cheap and thorough; and the eminent success which, prior to my visit to Europe, had attended the application of the Lancasterian or monitorial system of instruction in the public schools of New York, had suggested the possibility of its being applicable to the higher schools, and to every branch of instruction. * * * On

* This site, then at the junction of the Bloomingdale and Old Post roads, and well out in the country, is the present Madison Square.

TABLE.—EXHIBITING THE DATE OF OPENING,—CAPACITY OF ACCOMMODATION,—NUMBER, AGE, DETENTION, REFORMATION, DEATHS, ESCAPES, AND EMPLOYMENT OF INMATES,—EXTENT OF GROUNDS,—AGGREGATE COST OF BUILDINGS AND GROUNDS,—NUMBER AND SALARIES OF OFFICIALS,—ANNUAL EXPENSE AND COST PER CAPITA, OF THE STATE AND CITY REFORM SCHOOLS IN THE UNITED STATES.

TITLE.	LOCATION.		DATE.	Present No.			Whole No.			Division of Time.			Land & cost.			Annual Expenses.														
	City.	State.		When Established.	When Opened.	Capacity of Accommodation.	Males.	Females.	Total.	Males.	Females.	Total.	Average Age when Admitted.	Average Period of Detention.	Per Centage of Reformed.	Since Opening.	Last 12 M'ths Since Opening.	Last 12 M'ths Since Opening.	Hours of labor.	Hours of sleep.	Hours at school.	Hours at meals.	Hours of Recreation.	Acres of Land.	Aggregate Cost.	Annual Expense.	Cost per Capita.	No. of Officers and Employees.	Aggregate Salaries.	Revenue from Labor.
House of Refuge, 3	New York.	N. Y.	1824	1825	1000	500	50	550	131	167	298	13.1	18	75	50	37	46	0	4	1	1	1	40	\$20,411	\$2,005	\$5.05	31	\$119	\$3,414	
House of Reformation, 3	Boston.	Mass.	1826	1826	1,400	1,200	200	1,400	1,000	400	1,400	18	18	70	3	3	5	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	3	\$200	\$1,500	
House of Refuge, 4 (within dept.)	Philadelphia.	Penn.	1829	1829	450	450	0	450	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 4 (colored dept.)	Philadelphia.	Penn.	1829	1829	100	100	0	100	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	New Orleans.	La.	1841	1841	200	200	0	200	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
Western House of Refuge, 1	New Orleans.	La.	1847	1848	500	500	0	500	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Washington.	D. C.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Cincinnati.	Ohio.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Providence.	R. I.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	
House of Refuge, 2	Utah.	Utah.	1846	1846	375	375	0	375	131	131	262	13	12	60	43	0	0	0	0	0	0	0	6	\$20,000	\$1,500	\$1.50	10	\$2,000	\$1,500	

visiting the High School of Edinburgh, and becoming acquainted with its gifted principal, Professor Pillans, my doubts of the possibility of applying the system to classical education with entire success were fully removed.

"My attention in the choice of a partner was early turned to Daniel H. Barnes, a private teacher of classics in the city. My two younger sons had been for some time pupils in his school. Though doing pretty well as a private teacher, he readily acceded to the proposal of uniting with me in the joint labors and responsibilities of the projected undertaking. * * *

"The price of tuition was fixed at \$3 per quarter for the *Introductory*, \$5 for the *Junior*, and \$7 for the *Senior* departments.

"Never had there been in the city a pay-school, undertaken as an adventure, in which so liberal an expenditure and such an ample provision for the comfort and convenience of pupils had been provided.

"The school was opened on the 1st of 3d month, 1825, with about 250 scholars; and so rapidly was it filled to its utmost limits, in the course of a short time, that several hundred applications were unavailingly made, and had to wait for vacancies, as they might occur by the secession of those who had entered. When entirely full, the three apartments contained 650 boys. This was quite too large a number for an effective commencement of the institution; which was to be organized upon a system differing in many respects from that to which the pupils had been accustomed, and against which many very strong prejudices existed in the public mind. Many of the private teachers in the city had exerted themselves to increase the prejudice. The monitorial system was decried as inefficient, baseless, ridiculous. It might be well enough in charity schools, in which *cheapness of instruction* was the main point—amount of learning in a given time of less importance. So incensed were some of the teachers against the two principals, that, at a meeting of the New York Teachers' Society, a vote of censure, and (if I remember rightly) of expulsion, was issued against us. Several teachers, however, there were in the city, whose views and deportment toward us were very urbane and liberal. They were satisfied with the correctness of our motives, and wished success to an undertaking designed to improve and render more thorough, as well as to cheapen, the courses of instruction given in our common schools. Several private schools were broken up by the immoderate flow of pupils to the High School; and, while this tended to aggravate the feeling against us on the part of the teachers and patrons of those schools, it served to exaggerate the defects, or partial failures, unavoidably incident to a new undertaking on so large a scale. * * *

"The reputation of the school became such as to render it one of the lions of the city to those who include education as an object of inquiry. It was, when at its height of prosperity, the most interesting and agreeable school I ever knew. The government became easy. So large a number, when once brought into order, had a powerfully controlling influence over unruly minds. Turbulent boys, when introduced, soon learned that they had no power to disturb so large a number, and the sooner learned they to submit. We had visitors from almost all parts of our own country, and many distinguished ones from Europe. I was compelled to engage in a correspondence, and answer letters of inquiry respecting our school and system, from several cities and towns of the United States.

"The school was continued until about the close of the year 1831. Its operation may be considered as decidedly successful. There were about 400 pupils in it at the time of its closing, and among them were children of the most respectable families in the city. It was, I believe, at the time of its institution, the first and the only pay-school in this country established on the *professed* principle of cheap and efficient instruction, based on the condition of the adoption and employment of the monitorial system, by which one teacher can communicate his knowledge to large numbers of pupils."

The discontinuance of this school was mainly owing to the fact that the Society of Mechanics and Tradesmen of New York—the rooms of their school in Chambers street having become too small—made so liberal an offer to the trustees of the High School for their premises that they decided to accept it. But its influence was permanently valuable. Indeed, to the operation of the High School, during the several years of its continuance, conjoined, as it was, with lectures on Natural Philosophy, Mechanics, Chemistry, Astronomy, Geology, Mineralogy, Physiology, &c., with the aid of apparatus that had cost, from time to time, nearly \$4,000, delivered to the higher classes of pupils, may be, in some measure, ascribed that pervading and quickened attention to the important subject of popular education which now so increasingly engages the mass of the thinking members of our communities.

During the prevalence of yellow fever, in 1822, Prof. Griscom took an active part in the discussions relative to the origin and proper remedies of the disease, and in the practical measures pursued.

About 1827, he was appointed professor of chemistry in Rutgers' Medical College, an institution established by Drs. Hosack, Mott, Francis, and McNeven, seceders from the New York Medical School, in consequence of a disagreement with the regents of the university.

But this, like its predecessor fifteen years before, was after a short time discontinued.

In consequence of a visit to Providence, R. I., Prof. Griscom accepted, in December, 1832, the appointment of literary principal of the Yearly Meeting Boarding-School, a Friends' institution at that place; having had no regular employment since the closing of the High School. He held this appointment about two years, exercising a general supervision of the school, and lecturing on natural science before some societies in Providence. But at the end of this time, some difficulties, arising from the excessive amount—as some of the managing committee of the school considered it—of his salary, \$1,500, and from some matters connected with the Hicksite controversy, induced him to resign; although, at the request of the committee, he remained six months longer, until midsummer of 1835.

son of

In the spring of 1836, Prof. Griscom went to reside with his son-in-law, Samuel J. Gummere, the author of a well-known text-book on surveying, and then professor of mathematics and natural philosophy in the school at West Haverford, Penn. Here, in a pleasant situation among beloved friends, and within a convenient distance from Philadelphia, Prof. Griscom remained a few years, occupying himself in revising the proof-sheets of the *Journal of the Franklin Institute*; but the death first of one daughter, and then of another, broke up the families there. A third daughter died of the same disorder, a pulmonary affection, in 1840. In January of 1841, he lectured, by invitation, before the New York Lyceum, on the connection between geology and the Mosaic account of the creation, with success. That winter he spent in Philadelphia, lecturing there also, and at Burlington. His course at the latter place, where, after more than thirty years, he reappeared in the character of an instructor, excited so much interest that a Lyceum was erected, and for some years used as a place for delivering lectures on various subjects.

In the spring of 1841, Prof. Griscom once more established his residence, as he had before contemplated doing, at Burlington, where he resided during the remainder of his life, not engaged in any continuous and laborious employment, but never losing his activity or industry, and always interested in all that pertained to the good and happiness of man. In 1842, he attended, with great satisfaction, the convention of the county school superintendents of New York, held at Utica, where he met and became acquainted with Horace Mann, George B. Emerson, and other eminent educators. He extended his journey to Rhode Island, and while absent was chosen one of the board of school trustees of Burlington, which office, or that of town superintendent, he continued to fill until nearly up to his death.

In addition to the private and public course of lectures which are spoken of in the autobiography, there were many others to which no allusion is made therein, and it is silent also respecting several institutions of benevolence and philanthropy with which it is well known he was connected, and in which he took deep interest.

On the 11th March, 1817, the New York Historical Society appointed him lecturer on chemistry and natural philosophy.

In November of the same year, he was chosen a manager of the New York Auxiliary Colonization Society, in the progress and labors of which he took an active interest for many years.

In 1820, he was elected an honorary member of the Cornwall Literary and Philosophical Society. In January, 1822, he was elected a *manager* of the New York Mechanics' Association. In November, 1823, he was chosen one of the vice-presidents of the New York Bible Society, and continued his connection with that body until his removal from the city.

In May, 1829, he was chosen one of the directors of the American Peace Society. In all of these institutions he manifested a warm concern.

The following extract from the autobiography, respecting his connection with the lecturing system, is interesting.

"From the attendance of lectures in the different cities and towns of Europe, wherever opportunity for it occurred, my conviction of the benefits of this mode of imparting and receiving instruction, as well as my taste for such pursuits, was considerably sharpened. I made some valuable additions to my apparatus in London, Paris, and Dublin; and, in the autumn after my return, reopened my course of lectures on natural philosophy and chemistry. They were very respectably attended; but I was convinced that a much more general devotion to these sources of knowledge might be excited than had ever been the case in New York, were the right methods pursued of drawing public attention to them. I resolved therefore to try the effect of appliances to the *esprit de corps*—the clannish spirit which is known to operate forcibly among certain classes of society. It was this, in some degree, which had favored my success in a young ladies' class, prior to my going abroad. I first proposed a *mechanics' class*. Consulting some of the most intelligent and influential of the mechanics of the city, I was encouraged by them to believe that something might be done, although upon the whole they deemed the low state of knowledge, and the general destitution of taste, among the working classes to be very inimical to the prospect of much success. I ventured, however, to give a public invitation to a general meeting of the mechanics at my lecture-room, for the purpose of devising a

plan for their benefit. The meeting was largely attended, and especially by the most judicious and well-informed master-mechanics. The result was an attendance larger than the room would conveniently accommodate. In addition to this, a class of mechanics' apprentices was formed, which also filled the room.

"The success of these incipient measures induced me to try the same mode of procedure with respect to *merchants*. A meeting was invited, it was well attended, the project was advocated, and, as in the former case, committees were appointed to secure the patronage of a class. The success was easy, and the class was large and respectable.

"Perhaps it may not involve too much of self-gratulation to believe that the plans thus suggested and pursued contributed to furnish, or at least to foster, the germs of those flourishing mechanics' and mercantile library lectures which now distinguish the commercial emporium, and the taste for instruction by lectures which is now so prevalent in Philadelphia and Boston."

His last effort as a lecturer was a course on chemistry, delivered before the lyceum company of Salem, N. J., his native town, at their request.

His wide-spread scientific reputation brought him numerous applications for his opinion upon a great variety of topics; while his well-known interest in every movement connected with the progress of education and virtue among the masses, and in every way tending to improve their moral, educational, or physical condition, created a desire, among the originators and promoters of philanthropic movements, that his name should be associated with theirs.

To every thing connected with either of his favorite sciences—Chemistry, Natural Philosophy, or Mineralogy—he was earnestly attentive; and we can not doubt that the industry, energy, and enthusiasm displayed by John Griscom, in his repeated and successful efforts in this direction, by his familiar popular lectures among all classes—especially mechanics and apprentices—had an influence in promoting this happy change equal to if not greater than that of any other individual of his time on this side of the Atlantic.

The watchful care and supervision exercised by him, in his capacity as school-visitor, at Burlington, over the schools committed to his charge, the frequency of his visits, the minuteness and ability with which he entered into all the details of discipline and study, the truly parental regard which marked his intercourse with both teacher and pupil, the discrimination observed in the selection of teachers, the fullness and freedom of his comments, the pleasure with which he was wont to commend those deserving of praise, the delicacy, and

yet earnestness, of his reproofs and suggestions of amendment—all these, which, from a knowledge of his character, would be matters of inference, are, in fact, also matters of record. Within the period of five years, including many months of infirmity and sickness, the books of the schools show that he has recorded 157 official visits, and some of these were made even after he was prevented, by the failure of his eyesight, from noting his observations with his own hand. In all these respects he has left an example of the conscientious discharge of a voluntary and patriotic duty worthy of all commendation.

As a partial exponent of Prof. Griscom's views on education, we insert the answers which he returned to the Circular* issued by Mr. Mann, in 1847, to eight of the most eminent practical teachers of the United States, asking evidence on points relative to certain contemplated changes in the Massachusetts school system.

"I advert, now, to the *ad hominem* questions. Many, like myself, may be at a loss for *good* data in giving the *per centage*.

"1st. My course embraces a period of practical teaching of forty-two or three years. It includes, first, one or two years in (log) country school-houses, in a southern county of this State; thirteen years in the little city of Burlington, N. J., where I now reside; twenty-five in the city of New York, (with the exception of a year spent in Europe on account of health;) and two and a half years in the literary charge of a boarding-school of the Society of Friends, at Providence, R. I. Twelve years have elapsed since I relinquished the position last mentioned, and the practice of teaching.

"2d. During most of the time, both sexes were under my supervision, including an average number, probably, of one hundred. For several years, a school of five hundred to seven hundred and fifty boys came under my daily charge of inspection and teaching; and, during a portion of the same time, I had the task of lecturing to, and overseeing, the upper classes of a school of three hundred girls.

"The whole number I can scarcely guess at. Several thousands of the juvenile race must have passed under my care and instruction.

"This does not include very numerous classes of adults and youth that attended courses of public lectures, which I gave during twenty years in the city of New York.

"My belief is that, under the conditions mentioned in the question, not more than two per cent. would be irreclaimable nuisances to society, and that ninety-five per cent. would be supporters of the moral welfare of the community in which they resided. * * *

"Finally, in the predicament last stated in the Circular, and supposing the teachers to be imbued with the Gospel spirit, I believe there would not be more

* After defining, in the author's terse and vigorous style, certain vices which infect society, such as profane swearing, intemperance, slander or defamation, lying, dishonesty in dealing, and others, the Circular submits the following specific inquiries:—

"1. How many years have you been engaged in school-keeping, and whether in the country or in populous towns or cities?

"2. About how many children have you had under your care; of which sex, and between what ages?

"3. Should all our schools be kept by teachers of high intellectual and moral qualifications, and should all the children in the community be brought within these schools, for ten months in a year, from the age of four to that of sixteen years; then what proportion—what per centage—of such children as you have under your care could, in your opinion, be so educated and trained that their existence, on going out into the world, would be a benefit and not a detriment, an honor and not a shame, to society? Or, to state the question in a general form, if all children were brought within the salutary and auspicious influences I have here supposed, what per centage of them should you pronounce to be irreclaimable and hopeless?"

than *one-half of one per cent.* of the children educated on whom a wise judge would be compelled to pronounce the doom of hopelessness and irreclaimability.

"In nothing which I have advanced, has it been my intention to advocate any sectarian instruction in our schools, or any thing adverse to the statutory limits of the Massachusetts school system. I therefore expressly disavow any intention to recommend truths or doctrines, as part of the moral instruction to be given in public schools, which any believer in the Bible would reasonably deem to be sectarian."

Perhaps no more fitting conclusion of this brief review of Professor Griscom's public school labors can be made, than by commending to the attention of teachers, every where, his

Recipe for the Regulation, Rectification, and Stimulation of a Small School.

"I. Let the different parts be collected together precisely at the appointed hour in the morning. If any are in the habit of being tardy, give them, just before their separation at the close of the school, a lecture on the importance of punctuality, and make them repeat in concert several wise proverbs on the benefits of punctuality and the evils of procrastination, &c. But, especially, give those who are always punctual some little privilege, which they will value.

"II. When the hour has arrived, let the door be shut, and spend a few minutes, first, in reading a short portion of Scripture—adding any remarks that may occur, by way of advice or encouragement. It would be well to mention the aggregate number of bad marks that had been entered the day, or sometimes the week, previous, and note, with pleasure, any diminution. If an increase is apparent, let sorrow and regret be the predominant expression.

"III. Consider every indication of refractoriness, obstinacy, and perverseness as a mental disease, requiring the best exercise of the physician's skill, and that the best fee is the pleasure of a perfect cure. Regard idleness as the want of a healthy circulation in the system, which will, in all probability, be remedied by agreeable stimulants—not spirituous but spiritual, not caustic but pungent, not so much inflictive as suasive—and not forgetting the wonderful effect of untiring perseverance.

"IV. The best general maxims in government are *suaviter in modo, fortiter in re*; and *amor vincit omnia*. The best kind of argument is the *argumentum ad hominem*; that is, to find out the peculiar bias, turn, temperament, foible, and virtue of each subject, and administer accordingly. Hence, private admonition is, in general, by far the most efficacious. Regard every victory as a triumph that may extend beyond the limits of time.

"V. Render every study as pleasant as possible to the scholar; try different methods; make them believe that they are improving; let the older, or the more advanced, sometimes teach those below them, in order to encourage and stimulate both.

"VI. Spend fifteen or twenty minutes, at the close of the school, or of the morning-session, in a lecture on some subject or department of knowledge which the larger portion may understand. Use the black-board as a substitute for apparatus. Every teacher may render this exercise pleasant and useful two or three times a week.

"VII. Let all those who can write learn to express their thoughts on paper, and encourage them, at stated periods, to *describe themselves*, or to express their own views of their own improvement in learning, in industry, in good habits and dispositions. This exercise has sometimes led to reformation.

"VIII. Preserve, as far as practicable, a pleasant intercourse with the parents. With a small school, this may be done by calls made once in a while, if only for a few minutes."

During the two last years of his life, Prof. Griscom's power of vision gradually failed him, and he became unable to read. In the beginning of 1852, the bronchial difficulties, which had for a considerable time troubled him, began to become serious, and he showed evident signs of yielding to thoracic disease. He resisted the disorder until the 26th of February, when he died, peacefully and apparently without pain, in the seventy-eighth year of his life.

He was interred in the city of Burlington, on the first of March, the funeral services being held in the Friends' meeting-house, the gallery of which was occupied by the pupils of the public schools, in charge of the trustees. His worthy friend and companion from his youth up, Richard Mott, paid an eloquent tribute to his character as a man and a Christian; and at the grave, Eliza Gurney, in a short address, made feeling allusion to the infirmity of vision of his latter years, which she said was sent to him in mercy, that he might more clearly discern the beauties of the Heavenly Kingdom with his spiritual eye.

II. PRIMARY EDUCATION IN GERMANY.

HISTORICAL DEVELOPMENT.

To Germany,* as a whole, as one people, and not to any particular state of Germany, as now recognized on the map of Europe, belongs the credit of first thoroughly organizing a system of public education under the administration of the civil power. Here, too, education first assumed the form and name of a science, and the art of teaching and training children was first taught systematically in seminaries established for this special purpose.

But not to Germany, or to any one people or any civil authority any where, but to the Christian Church, belongs the higher credit of first instituting the public school, or rather the parochial school, for the elementary education of the poor, which was the earliest form which this mighty element of modern society assumed. After the third century of the Christian era, whenever a Christian church was planted, or religious institutions established, there it was the aim of the higher ecclesiastical authorities to found, in some form, a school for the nurture of children and youth for the service of religion and duties of society. Passing by the ecclesiastical and catechetical schools, we find, as early as 529, the council of Vaison strongly recommending the establishment of village schools. In 800 a synod at Mayence ordered that the parochial priests should have

* Mr. W. E. Hickson, in his valuable pamphlet, entitled "*Dutch and German Schools*," published in London in 1840, well says:

"We must bear in mind that the German states, although under different governments, are not nations as distinct from, and independent of each other, as France and Spain, or as Russia and Great Britain. Each of the German states is influenced more or less by every other; the whole lying in close juxtaposition, and being linked together by the bond of a common language and literature. The boundary line that separates Prussia from Hesse on one side, or from Saxony on another, is not more defined than that of a county or parish in England. A stone in a field, or a post painted with stripes, in a public road, informs the traveler that he is passing from one state into another, that these territorial divisions make no change in the great characteristics of the people: whatever the name of the state, or the color of the stripes, the people, with merely provincial differences, are the same: from the Baltic to the Adriatic, they are still Germans. The national spirit may always be gathered from the national songs, and in Germany the most popular are those which speak of all Germans as brothers, and all German states as belonging to one common country, as may be gathered from the following passage of a song of M. Arndt:—

"What country does a German claim?
His Fatherland: know'st thou its name?
Is it Bavaria,—Saxony?
An inland state, or on the sea?
There, on the Baltic's plains of sand?
Or mid the Alps of Switzerland?
Austria, the Adriatic shores?
Or where the Prussian eagle soars?
Or where hills covered by the vine,

Adorn the landscape of the Rhine?
Oh no, oh no, not there, alone,
The land, with pride, we call our own,
Not there. A German's heart or mind
Is to no narrow realm confined.
Where'er he hears his native tongue,
When hymns of praise to God are sung,
There is his Fatherland, and he
Has but one country—Germany!"

schools in the towns and villages, that the little children of all the faithful might learn letters from them; "let them receive and teach these with the utmost charity, that they themselves may shine as the stars for ever. Let them receive no remuneration from their scholars, unless what the parents through charity may voluntarily offer." A council at Rome, in 836, under Eugene II., ordained that there should be three kinds of schools established throughout Christendom; episcopal, parochial in towns and villages, and others wherever there could be found place and opportunity. In 836, Lothaire I. promulgated a decree to establish eight public schools in some of the principal cities of Italy, "in order that opportunity may be given to all, and that there may be no excuse drawn from poverty and the difficulty of repairing to remote places." The third council of Lateran, in 1179, says: "Since the Church of God, as a pious mother, is bound to provide that opportunity for learning should not be withdrawn from the poor, who are without help from patrimonial riches, be it ordained, that in every cathedral there should be a master to teach both clerks and poor scholars gratis." This decree was enlarged and again enforced by Innocent III. in the year 1215. Hence, in all colleges of canons, one bore the title of the scholastic canon. The council of Lyons, in 1215, decreed "that in all cathedral churches, and others provided with adequate revenues, there should be established a school and a teacher by the bishop and chapter, who should teach the clerks and other poor scholars gratis in grammar, and for this purpose a stipend should be assigned him."^a

Such was the origin of the popular school, as now generally understood—every where the offspring, and companion of the Church; sharing with her, in large measure, the imperfections which attach to all new institutions and all human instrumentalities; encountering peculiar difficulties from the barbarism of the age and people through which it passed, and which it was its mission to enlighten; and every where crippled by insufficient endowments, unqualified teachers, and the absence of all text books, and necessary aids to instruction and illustration. The discovery of the art of printing, in 1440, and the consequent multiplication of books at prices which brought them more within reach of the great mass of the people; the study and use of the vernacular language by scholars and divines, and particularly its employment in the printing of the Bible, hymns, popular songs, school books, and in religious instruction generally; the recognition by the municipal authorities of cities, and at a later period by the higher civil power, of the right, duty and interest of the state, in connection with, or independent of the church, to provide liberally and efficiently for the education of all children and youth; and above all, the intense activity given to the human mind by the religious movement of Luther, in the early part of the sixteenth century; the assertion of the right of private judgment in the interpretation of the scriptures; the breaking up of existing ecclesiastical foundations, and the diversion of funds

^a Digby's *Mores Catholici*.

from religious to educational purposes,—all these causes, combined with the general progress of society, co-operated to introduce an advantageous change in the organization, administration, instruction and discipline of the popular school. But the progress actually made from year to year, and century even to century, was slow, and after three hundred years of effort, there is much yet to be done even in those states and communities which have accomplished the most toward improving the outward organization and instrumentalities of the schools, and above all its internal life in the improved qualification and position of the teachers—for as is the teacher, so is the school. A brief reference to a few of the more prominent names in the history of popular education in Germany, and through Germany, of Modern Europe, is all that can be attempted at this time and in this connection. Among these names stands prominent that of Martin Luther.

In a letter to the Elector of Saxony, in the year 1526, Luther says:*

"Since we are all required, and especially the magistrates, above all other things, to educate the youth who are born and are growing up among us, and to train them up in the fear of God and in the ways of virtue, it is needful that we have schools and preachers and pastors. If the parents will not reform, they must go their way to ruin, but if the young are neglected, and left without education, it is the fault of the state; and the effect will be that the country will swarm with vile and lawless people, so that our safety, no less than the command of God requireth us to foresee and ward off the evil." He maintains in that letter that the government, "as the natural guardian of all the young," has the right to compel the people to support schools. "What is necessary to the well-being of a state, that should be supplied by those who enjoy the privilege of such state. Now nothing is more necessary than the training of those who are to come after us and bear rule. If the people are too poor to pay the expense, and are already burdened with taxes, then the monastic funds, which were originally given for such purposes, are to be employed in that way to relieve the people." The cloisters were abandoned in many cases, and the difficult question, what was to be done with their funds, Luther settled in this judicious manner. How nearly did he approach to the policy now so extensively adopted in this country, of supporting schools partly by taxation and partly by funds appropriated for that purpose.

In 1524 he wrote a remarkable production, entitled "An Address to the Common Councils of all the Cities of Germany in behalf of Christian Schools," from which a few passages may here be extracted. After some introductory remarks, he comes directly to his point, and says to his countrymen collectively:

"I entreat you, in God's behalf and that of the poor youth, not to think so lightly of this matter as many do. It is a grave and serious thing, affecting the interest of the kingdom of Christ, and of all the world, that we apply ourselves to the work of aiding and instructing the young. . . . If so much be expended every year in weapons of war, roads, dams, and countless other things of the sort for the safety and prosperity of a city; why should not we expend as much for the benefit of the poor, ignorant youth, to provide them with skillful teachers? God hath verily visited us Germans in mercy and given us a truly golden year. For we now have accomplished and learned young men, adorned with a knowledge of literature and art, who could be of great service if employed to teach the young. . . .

Even if the parents were qualified, and were also inclined to teach, they have so much else to do in their business and household affairs that they can not find the time to educate their children. Thus there is a necessity that public teach-

* The following extracts are taken from Dr. Sears' "*Life of Martin Luther*," published by the American Sunday School Union.

ers be provided. Otherwise each one would have to teach his own children, which would be for the common people too great a burden. Many a fine boy would be neglected on account of poverty; and many an orphan would suffer from the negligence of guardians. And those who have no children would not trouble themselves at all about the whole matter. Therefore it becometh rulers and magistrates to use the greatest care and diligence in respect to the education of the young.

The diligent and pious teacher who properly instructeth and traineth the young, can never be fully rewarded with money. If I were to leave my office as preacher, I would next chose that of schoolmaster, or teacher of boys; for I know that, next to preaching, this is the greatest, best, and most useful vocation; and I am not quite sure which of the two is the better; for it is hard to reform old sinners, with whom the preacher has to do, while the young tree can be made to bend without breaking."

In 1527, a visitation was made of the churches and schools of the electorate of Saxony, in which more than thirty men were employed a whole year. The result in respect to education was, that the "Saxon school system," as it was called, was drawn up by the joint labors of Luther and Melancthon; and thus the foundation was laid for the magnificent organization of schools to which Germany owes so much of her present fame.

In a letter to Margrave George, of Bradenburg, July 18, 1529:—

"I will tell you what Melancthon and myself, upon mature consideration, think best to be done. First, we think the cloisters and foundations may continue to stand till their inmates die out. . . . Secondly, it would be exceedingly well to establish in one or two places in the principality a learned school, in which shall be taught, not only the Holy Scriptures, but law, and all the arts, from whence preachers, pastors, clerks, counselors, &c., may be taken for the whole principality. To this object should the income of the cloisters and other religious foundations be applied, so as to give an honorable support to learned men; two in theology, two in law, one in medicine, one in mathematics, and four or five for grammar, logic, rhetoric, &c. . . . Thirdly, in all the towns and villages, good schools for children should be established, from which those who are adapted to higher studies might be taken and trained up for the public."

Under these instructions and appeals a school law was adopted in Wirtemberg in 1559, and modified in 1565; in Saxony in 1560, and improved in 1590; in Hesse in 1565; and in Brandenburg, still earlier; which recognized and provided for the classification, inspection, and support of public schools on substantially the same plan which prevails to this day throughout Germany.

The pedagogical work of Luther—his labors to improve the method of instruction—were continued by Trotzendorf,* in Goldberg, from 1530 to 1556; by Sturm, in Strasbourg, from 1550 to 1599; by Neander, in Ilfeld, from 1570 to 1595, whose schools were all Normal Schools, in the original acceptation of the term, *pattern* or *model* schools, of their time. They were succeeded by Wolfgang Ratich, born at Wilster, in Holstein, in 1571; by Christopher Helwig, born near Frankfort, in 1581; and by Amos Comenius, born at Comna, in Moravia, in 1592; who all labored, by their writings, and by organizing schools and courses of instruction, to disseminate improved methods of teaching. Comenius was invited by an act of parliament in 1631, to visit England for the purpose of intro-

* Trotzendorf practiced the monitorial system of instruction two hundred and fifty years before Dr. Bell or Joseph Lancaster set up their claims for its discovery.

ducing his method into the public institutions of that country. But internal commotions interrupted and ultimately defeated his plans.

In 1618, the religious war—known as the *Thirty Years' war*—broke out in Germany, and for an entire generation swept over the land, wasting harvest fields, destroying cities, tearing fathers from the protection of their families, scattering teachers and schools, and arresting the progress of all spiritual and educational improvement. At the close of the war, and in some of the smaller states during its progress, the civil government began to take effectual steps to secure the attendance of children at school, by making it compulsory on parents, on penalty of fine and imprisonment for neglect, to send them during a certain age. This was first attempted in Gotha, in 1643; in Heildesheim, in 1663; and in Prussia, in 1669; and Calenberg, in 1681. About this period, two men appeared, Philip J. Spener, born in the Alsace in 1635, and Augustus Herman Franké, born at Lübeck in 1663; who, the first by the invention of the catechetic method, and the last, a pupil of the former, by the foundation of the orphan-house at Halle in 1696, were destined to introduce a new era in the history of education in Germany.

The history of the orphan-house at Halle, is a beautiful illustration of practical Christian charity, and the ever-extending results of educational labor. While pastor of Glaucha, a suburb of Halle, he was in the habit of distributing bread to the poor, with whose poverty and ignorance he was equally distressed. To relieve at once their physical and spiritual destitution, he invited old and young into his house, and while he distributed alms, he at the same time gave oral and catechetical instruction in the principles of the Christian faith. To benefit the orphan children still more, he took a few into his family in 1694, and to avail himself of the gifts of the charitable, he resorted to the following expedient, according to his biographer, Dr. Guerike:

"He caused a box to be fastened up in the parlor of the parsonage-house, and wrote over it, 'Whoso hath this world's goods, and seeth his brother have need, and shutteth up his bowels of compassion from him, how dwelleth the love of God in him?' (1 John iii. 17,) and underneath, 'Every one according as he purposeth in his heart, so let him give; not grudgingly or of necessity; for God loveth a cheerful giver,' (2 Cor. ix. 17.) This box, which was destined for the reception of the casual gifts of those who visited Franké, was fixed up at the commencement of 1695; and not in vain. The passage (2 Cor. ix. 8,) had fallen in his way, a short time before this circumstance, and now occurred the incident related in his letter to Schädé. 'This,' says he, 'served to show me, how God is able to make us abound in every good work.'

'After the poor's-box had been fixed up in my dwelling about a quarter of a year,' relates Franké, 'a certain person put, at one time, four dollars and sixteen groschen into it. On taking this sum into my hand, I exclaimed with great liberty of faith,—This is a considerable sum, with which something really good must be accomplished; I will commence a school with it for the poor. Without conferring, therefore, with flesh and blood, and acting under the impulse of faith, I made arrangement for the purchase of books to the amount of two dollars, and engaged a poor student to instruct the poor children for a couple of hours daily, promising to give him six groschen weekly for so doing, in the hope that God would meanwhile grant more; since in this manner a couple of dollars would be spent in eight weeks.'

Franké, who was ready to offer up whatever he had to the service of his neighbor, fixed upon the ante-chamber of his study, for the school-room of the

poor children, who began regularly to receive instruction at Easter, 1695. In this school-room, he caused a second box to be fixed up, with the inscription, 'For the expenses of the instruction of the children, needful books, &c.,' and underneath, 'He that hath pity upon the poor, lendeth to the Lord; and that which he hath given, will he pay him again,' (Prov. xix. 17.)

At Whitsuntide, Franké was visited by some friends, who were much pleased at his efforts in behalf of the poor, to which they contributed a few dollars. Others also gave small donations, from time to time, to the school-box. Soon after Whitsuntide, when some of the townspeople saw how regularly the children of the poor received instruction, they became desirous of sending their children likewise to the same teacher, and offered to pay him weekly a groschen for each child; so that the teacher now received sixteen groschen weekly for a five-hours' daily instruction. The number of his scholars, that summer, amounted to between fifty and sixty, of which the poor, besides gratuitous instruction, also received alms, twice or thrice a-week, to incite them to attend school the more willingly. Donations in money, and linen, for shirts for the poor children, began now to arrive from other places.

About Whitsuntide of the same year, Franké laid also the first foundation for what was subsequently called the royal school. The widow of a nobleman desired him to send her a domestic tutor for her own, and one of her friend's children. He found no one who was sufficiently far advanced in his studies, and therefore proposed to the parents, to send their children to Halle, and that he would then provide for their education, by able teachers and guardians. The parents agreed to this plan; and a few months afterward, an additional number of youths were sent, and thus originated the seminary above mentioned, which, in 1709, consisted of an inspector, twenty-three teachers, and seventy-two scholars; and in 1711, by means of Franké's exertions, had a building appropriated exclusively to it.

In the summer of the same year, 1695, Franké unexpectedly and unsolicited received a very considerable contribution; for a person of rank wrote to him with the offer of five hundred dollars, for the purpose of distribution among the poor, and especially among the indigent students. This money was shortly afterward paid over to him. He then selected twenty poor students, whom he assisted with a weekly donation of four, eight, or twelve groschen; 'and this,' says he, 'was in reality the origin of the poor students' participating to the present hour, in the benefits of the orphan-house.'

In the autumn there was no longer sufficient room in the parsonage for the increasing number of scholars; he therefore hired a school-room of one of his neighbors, and a second in the beginning of the winter. He then divided the scholars into two classes, and provided a separate teacher for the children of the townspeople, and another for the children of the poor. Each teacher gave four hours instruction daily, and received a guilder weekly, besides lodging and firing gratis.

But Franké was soon made to see, that many a hopeful child was deprived, when out of school, of all the benefit he received in it. The idea therefore occurred to him, in the autumn of 1695, to undertake the entire charge and education of a limited number of children; 'and this,' says he, 'was the first incitement I felt, and the first idea of the erection of an orphan-house, even before I possessed the smallest funds for the purpose. On mentioning this plan to some of my friends, a pious individual felt induced to fund the sum of five hundred dollars for that purpose,—twenty-five dollars for the interest on which were to be paid over every Christmas, which has also been regularly received. On reflecting upon this instance of the divine bounty, I wished to seek out some poor orphan child, who might be supported by the yearly interest. On this, four fatherless and motherless children, all of the same family, were brought to me. I ventured, in confidence upon God, to receive the whole four; but as one of them was taken by some other good people, only three were left; but a fourth soon appeared in the place of the one that had been taken. I took therefore these four; placed them with religious people, and gave them weekly half a dollar for the bringing up of each. On this, it happened to me, as is generally the case, that when we venture to give a groschen to the poor in faith, we feel afterward no hesitation in venturing a dollar upon the same principle. For after having once begun in God's name, to receive a few poor orphans without any human prospect of certain assistance, (for the interest of the five hundred

dollars was not sufficient to feed and clothe a single one.) I boldly left it to the Lord to make up for whatever might be deficient. Hence the orphan-house was by no means commenced and founded upon any certain sum in hand, or on the assurances of persons of rank to take upon themselves the cost and charges, or upon any thing of a similar nature, as was subsequently reported, and as some were inclined to suppose; but solely and simply in reliance on the living God in heaven.

'The day after I had undertaken the charge of the four orphans above-mentioned, two more were added; the next day, another; two days afterward, a fourth, and one more after the lapse of a week. So that, on the 16th November, 1695, there were already nine, who were placed with pious people.' He fixed upon George Henry Neubauer, a student of divinity, to have the oversight of their education and their bringing up. 'Meanwhile,' continues he, 'the faithful God and Father of the fatherless, who is able to do abundantly above what we can ask or think, came so powerfully to my aid, that foolish reason could never have expected it. For he moved the hearts of those persons of rank, who had given me the five hundred dollars already mentioned, to present me with an additional sum of a thousand dollars in the beginning of the winter. And in the middle of the winter, another person of rank was incited to send me three hundred dollars to enable me to continue my attention to the poor. Another individual gave a hundred dollars, and others gave donations of smaller sums.'

Franké had hitherto distributed the money destined for the poor students weekly; but in 1696, the idea occurred to him, instead of a weekly allowance, to give them dinner gratuitously; 'in the firm confidence in God, that he would from time to time send such supplies, as to enable this arrangement to be continued.' By this he expected to be of greater service to the poor students; he could also, in this manner, become better acquainted with them, and possess a better insight into their life and conduct; and lastly, restrain the applications of the less needy, 'who would gladly have been more delicately fed.' Two open tables were therefore provided—each for twelve poor students; and that one thing might assist the other, he selected the teachers of the charity-school from them. This was the origin of the teachers' seminary, which afterward gradually arose out of it.

The schools of the children of the townspeople who paid a certain sum for their instruction, though inadequate to the expense, were separated from the school for the poor, at the request of the townspeople themselves; and in September, 1697, another school was added for those tradesmen's children who were instructed in the elements of superior science. About this time also, more classes were required in the orphan school, on account of the increased number of the pupils. The boys and girls received separate instruction, and when any of the former manifested abilities, they were again separated from the rest, and instructed in languages and the sciences by particular teachers. In May, 1699, Franké united this class of the orphan children with the class of the tradesmen's children, who likewise received superior instruction. These arrangements for imparting a more learned education, show us the rudiments from whence the Latin school or Gymnasium afterward developed itself in Franké's institutions, which in 1709 was attended by two hundred and fifty-six children, of whom sixty-four were orphans, divided into seven classes; and in 1730, by more than five hundred pupils.

At the time of his death, the Orphan House, or Hallische Waisenhaus, embraced all the institutions which now belong to it.

1. The *Orphan Asylum*, established in 1694, in which over 5,000 orphans had been educated, up to 1838, gratuitously. Such of the boys as manifest peculiar talent, are prepared for the university, and supported there.

2. The *Royal Pädagogium*, founded in 1696, for the education of children of rich and noble families. Up to 1839, 2,850 individuals had been educated in this boarding institution. The profits of this school are paid over to the orphan asylum.

3. The *Latin School*, established in 1697, for pupils from abroad, of less wealthy condition than the former, and for boys of the city of Halle.

4. The *German School*, for boys and girls whose parents do not wish to give them a classic education.

These several schools number from 3,000 to 4,000 pupils,* of every age, and in every study. Besides these schools there are other features in the institution.

5. The *Canstein Bible Press*, established in 1712, to furnish the Bible at a cheap rate. The profits on the sale of an edition are applied to diminish the expense of the next edition.

6. A *Library*, commenced by Franké by setting apart his own books for the use of his schools, and which now number 20,000 volumes.

7. An *Apothecary's Shop*, commenced by Franké as a medicine chest for the poor, and the profit of which, after furnishing the wants of the orphan-house, are applied to the support of the institution.

8. A *Book Establishment*, in which the classics, and school books, are published at a low price, not only for the institution, but for the trade generally.

9. A house for widows.

We have dwelt on the labors of Franké, because he proved his faith in God by his works, and because he was an educator in the largest and best sense of that designation.

According to his biographer, the first teachers' class was founded by Franké in 1697, by providing a table or free board for such poor students as stood in need of assistance, and selecting, a few years later, out of the whole number, twelve who exhibited the right basis of piety, knowledge, skill and desire for teaching, and constituting them his "*Seminarium Præceptorum*," Teachers' Seminary. These pupil teachers received separate instruction for two years, and obtained a practical knowledge of methods, in the classes of the several schools. For the assistance thus rendered they bound themselves to teach for three years in the institution after the close of their course. In 1704, according to Raumer, this plan was matured, and the supply of teachers for all the lower classes were drawn from this seminary. But besides the teachers trained in this branch of Franké's great establishment, hundreds of others, attracted by the success of his experiment, resorted to Halle, from all parts of Europe, to profit by the organization, spirit, and method of his various schools. Among the most distinguished of his pupils and disciples, may be named, Count Zinzendorf, the founder of the communities of United Brethren, or Moravians, in Herrnhut, in 1722; Steinmetz, who erected a Normal School in Klosterbergen, in 1730; Hecker, the founder of the first Real

* It is interesting to a visitor to remark in the chief cities of Germany, during certain hours the silence of the streets, with their entire desertion by children, and the contrast of the change produced by the clock striking twelve. The road and footway then suddenly swarm with children, carrying books and slates, and returning from the studies of the morning. The most striking sight of the kind we ever witnessed was at Halle, where, as we approached a large educational establishment, called the "*Hallische Waisenhaus*," the whole of its juvenile inmates, 3,000 in number, burst forth into the street, and filling up the entire roadway, formed an unbroken stream of a quarter of a mile in length.—*Hickson's Dutch and German Schools*.

School in Berlin, to which a seminary for teachers was attached in 1748; Rambalt, who lectured in the Universities in Jena and Gießen in pedagogic, and reformed the schools in Hesse-Darmstadt; Felbiger, who reorganized the schools of Silesia, and afterward those of Austria;—these, and others scarcely less distinguished, were among the most eminent and successful teachers of the day, and were known as the school of Pietists.

The educational school of Franké was followed by Basedow, (born at Hamburg, in 1723,) Campe, and Salzman, who acquired for themselves a European reputation by the *Philanthropinum*, founded by the former at Dessau, in 1781.

This institution gave its name to the school of educationists, known as *Philanthropinic*, and which prevails at this day in some sections of Germany. Its earliest development on the continent was made by Rousseau, in his "*Emile*," and by John Locke, in England, in his "*Thoughts on Education*." Its great aim was the formation of a practical character, and this was to be accomplished by following the indications of nature. The body, as well as the mind, was to be hardened and invigorated, and prepared to execute with energy the designs of the mind. The discipline of the family and school was softened by constant appeals to the best principles in the child's nature. Particular attention was paid to instruction in language, music, and the laws and objects of nature. Many of these principles became engrafted on to the teachers of Normal Schools, and through their pupils were introduced into the common schools.

About this time appeared Henry Pestalozzi, who followed in the track of the *Philanthropinic* School, and by his example and writings, diffused a new spirit among the schools of primary instruction, all over Europe. Although born in Switzerland, at Zurich, in 1746, and although his personal labors were confined to his native country, and their immediate influence was weakened by many defects of character, still his general views of education were so sound and just, that they are now adopted by teachers who never read a word of his life or writings, and by many who never heard of his name. When the Prussian government, in 1809, undertook systematically the work of improving the elementary schools, as a means of creating and diffusing a patriotic spirit among the people, the fame of Pestalozzi was at its height. To him and to his school, to his method and to his disciples, the attention of the best teachers in the kingdom was turned for guidance and aid. Several enthusiastic young teachers were sent to his institution at Yverdun, to study his methods and imbibe his spirit of devotion to the children of the poor. Through them, and others who went directly to Pestalozzi, these principles and methods were transplanted not only into various parts of Prussia, but also into the schools and seminaries of other states in Germany.

The schools of most of the teachers and educators, whose names have been introduced, were in reality Teachers' Seminaries, although not so designated by themselves or others. Their establishments were not simply schools for children, but were conducted to test and exemplify

principles and methods of education, and these were perpetuated and disseminated by means of books in which they were embodied, or of pupils and disciples who transplanted them into other places.

As has been already stated, on the authority of Franké's biographer, and of Schwartz, Ranmer, and other writers on the history of education in Germany, the first regularly-organized Teachers' Seminary, or Normal School, (not *normal* in the sense in which the word was originally used, as a school of children so conducted as to be a *model* or *pattern* for teachers to imitate, but a *school of young men*, who had already passed through an elementary, or even a superior school, and who were preparing to be teachers, by making additional attainments, and acquiring a knowledge of the human mind, and the principles of education as a science, and of its methods as an art,) was established in Halle, in a part of Hanover, prior to 1704. About the same period, Steinmetz opened a class for teachers in the Abbey of Klosterberge, near Magdeburg, and which was continued by Resewitz, by whom the spirit and method of Franké and the pietists were transplanted into the north of Germany. In 1730, lectures on philology and the best methods of teaching the Latin, Greek and German languages, were common in the principal universities and higher schools. The first regularly-organized seminary for this purpose, was established at Gottingen, in 1738, and by its success led to the institution of a similar course of study and practice in Jena, Halle, Helmstadt, Heidelberg, Berlin, Munich, &c.

In 1735, the first seminary for primary school teachers was established in Prussia, at Stettin, in Pomerania. In 1748, Hecker, a pupil of Franké, and the founder of burgher, or what we should call high schools, established an institution for teachers of elementary schools, in Berlin, in which the king testified an interest, and enjoined, by an ordinance in 1752, that the country schools on the crown lands in New Mark and Pomerania should be supplied by pupil teachers from this institution who had learned the culture of silk and mulberries in Hecker's institution, with a view of carrying forward industrial instruction into that section of his kingdom. In 1757, Baron von Fürstenberg established a seminary for teachers at Munster, in Hanover. In 1767, the Canon von Rochow opened a school on his estate in Rekane, in Brandenburg, where, by lectures and practice, he prepared schoolmasters for country schools on his own and neighboring properties. To these schools teachers were sent from all parts of Germany, to be trained in the principles and practice of primary instruction. In 1770, Bishop Felbinger, organized a Normal (*model*) School in Vienna, with a course of lectures and practice for teachers, extending through four months; and about the same time the deacon Ferdinand Kindermann, or von Schulstein, as he was called by Maria Theresa, converted a school in Kaplitz, in Bohemia, into a Normal Institution. Between 1770 and 1800, as will be seen by the following Table, teachers' seminaries were introduced into nearly every German state, which, in all but three instances, were supported in whole or in part by the government.

As the demand for good teachers exceeded the supply furnished by these seminaries, private institutions have sprung up, some of which have attained a popularity equal to the public institutions. But in no state have such private schools been able to sustain themselves, until the government seminaries and the public school system had created a demand for well-qualified teachers. And in no state in Europe has the experiment of making seminaries for primary school teachers an appendage to a university, or a gymnasium, or any other school of an academic character, proved successful for any considerable period of time, or on an extensive scale.

At the beginning of the present century, there were about thirty teachers' seminaries in operation. The wars growing out of the French Revolution suspended for a time the movements in behalf of popular education, until the success of the new organization of schools in Prussia, commencing in 1809, arrested the attention of governments and individuals all over the continent, and has led, within the last quarter of a century, not only to the establishment of seminaries nearly sufficient to supply the annual demand for teachers, but to the more perfect organization of the whole system of public instruction.

The cardinal principles of the system of Primary Public Instruction as now organized in the German states, are,

First. The recognition on the part of the government of the right, duty and interest of every community, not only to co-operate with parents in the education of children, but to provide, as far as practicable, by efficient inducement and penalties, against the neglect of this first of parental obligations, in a single instance. The school obligation,—the duty of parents to send their children to school, or provide for their instruction at home,—was enforced by law in Saxe-Gotha, in 1643; in Saxony and Wirtemberg, in 1659; in Hildesheim in 1663; in Calemberg, in 1681; in Celle, in 1689; in Prussia, in 1717; and in every state of Germany, before the beginning of the present century. But it is only within the last thirty years, that government enactments have been made truly efficient by enlisting the habits and good will of the people on the side of duty. We must look to the generation of men now coming into active life for the fruits of this principle, universally recognized, and in most cases wisely enforced in every state, large and small, Catholic and Protestant, and having more or less of constitutional guaranties and forms.

Second. The establishment of a sufficient number of permanent schools of different grades, according to the population, in every neighborhood, with a suitable outfit of buildings, furniture, appendages and apparatus.

Third. The specific preparation of teachers, as far as practicable, for the particular grade of schools for which they are destined, with opportunities for professional employment and promotion through life.

Fourth. Provision on the part of the government to make the schools accessible to the poorest, not, except in comparatively a few instances,

and those in the most despotic governments, by making them free to the poor, but cheap to all.

Fifth. A system of inspection, variously organized, but constant, general, and responsible—reaching every locality, every school, every teacher, and pervading the whole state from the central government to the remotest district.

The success of the school systems of Germany is universally attributed by her own educators to the above features of her school law—especially those which relate to the teacher. These provisions respecting teachers may be summed up as follows:—

1. The recognition of the true dignity and importance of the office of teacher in a system of public instruction.

2. The establishment of a sufficient number of Teachers' Seminaries, or Normal Schools, to educate, in a special course of instruction and practice, all persons who apply or propose to teach in any public primary school, with aids to self and professional improvement through life.

3. A system of examination and inspection, by which incompetent persons are prevented from obtaining situations as teachers, or are excluded and degraded from the ranks of the profession, by unworthy or criminal conduct.

4. A system of promotion, by which faithful teachers can rise in a scale of lucrative and desirable situations.

5. Permanent employment through the year, and for life, with a social position and a compensation which compare favorably with the wages paid to educated labor in other departments of business.

6. Preparatory schools, in which those who wish eventually to become teachers, may test their natural qualities and adaptation for school teaching before applying for admission to a Normal School.

7. Frequent conferences and associations for mutual improvement, by an interchange of opinion and sharing the benefit of each others' experience.

8. Exemption from military service in time of peace, and recognition, in social and civil life, as public functionaries.

9. A pecuniary allowance when sick, and provision for years of infirmity and old age, and for their families in case of death.

10. Books and periodicals, by which the obscure teacher is made partaker in all the improvements of the most experienced and distinguished members of the profession in his own and other countries.

With this brief and rapid survey of the history and condition of Popular Education in Germany, we will now pass to a more particular description of primary schools in several states, with special reference to the organization and course of instruction of Normal Seminaries, and other means and agencies for the professional training of teachers. Before doing this, we publish a table, prepared from a variety of school documents, exhibiting the number and location of Normal Schools in Germany, with the testimony of some of our best educators as to the result of this Normal School system.

TABLE.

NUMBER AND LOCATION OF NORMAL SEMINARIES IN THE DIFFERENT STATES OF GERMANY.

The following Table has been compiled from recent official documents and school journals, and without being complete, is accurate as far as it goes. Calinich, in an article in Reden's Magazine, estimates the whole number of public and private seminaries in Germany, at one hundred and fifty-six, and the preparatory schools at two hundred and six.

PRUSSIA ,	45	HANOVER ,	7
SUPERIOR SEMINARIES.		Alfeld, f. 1750; Hanover, Hildesheim, Osnabrück, Stade; one for Jewish teachers in Hanover.	
Stettin, founded 1735; Potsdam, foun. 1748; Breslau, foun. 1765; Halberstadt, f. 1778; Magdeburg, f. 1790; Weissenfels, f. 1794; Karalene, f. 1811; Braunsberg, f. 1810; Marienburg, f. 1814; Graudenz, f. 1816; Neuzelle, f. 1817; Berlin, f. 1830; Cöslin, f. 1806; Bunzlau, f. 1816; Bromberg, f. 1819; Paradies, f. 1838; Erfurt, f. 1830; Bären, f. 1825; Meurs, f. 1820; Neuwied, f. 1816; Brühl, f. 1823; Kempen, f. 1840; Königsberg, re-organized, 1809; Ober-Glogau, re-or., 1815; Posen, f. 1804; Soest, f. 1818; Löwen, f. 1849.		BADEN ,	
SMALL, OR SECONDARY SEMINARIES.		Carlsruhe, f. 1768; Ettlingen, Meersburg, Müllheim.	
Angerburg, f. 1829; Mühlhausen, Greifswald, f. 1791; Kammin, f. 1840, Pyritz, f. 1827; Trzemesseo, f. 1829; Gardelegen, f. 1821; Eisleben, f. 1836; Petershagen, f. 1831; Langenhorst, f. 1830; Heiligenstadt, Eylan, Alt-Döbern, Stralsund.		HESSÉ-CASSEL ,	
FOR FEMALE TEACHERS.		Fulda, Homberg, Schlichtern.	
Münster; Paderborn; private seminaries in Berlin, (Bormann); Marienwerder, (Alberti); Kaiserswerth, (Fleider).		HESSÉ-DARMSTADT ,	
AUSTRIA ,	11	Friedberg, Bensheim.	
Vienna, f. 1771; Prague, Trieste, Salzburg, Inspruck, Graz, Görz, Klagenfurt, Laibach, Linz, Brünn.		ANHALT ,	
SAXONY ,	10	Bernburg, Cöthen, Dessau.	
Dresden, f. 1785; Fletcher's seminary, f. 1826; Freiberg, f. 1797; Zittau, Budissin, Plauen, Grimma, Annaberg, Pirna, Waldenburg.		REUSS ,	
BAVARIA ,	9	Greiz, Gera, Schleiz.	
Bamberg, f. 1777; Eichstätt, Speyer, Kaiserslautern, Lauingen, Altdorf, Schwabach.		SAXE COBURG-GOTHA ,	
WIRTEMBERG ,	8	Coburg; Gotha, f. 1779.	
Esslingen, Oehringen, Gmünd, Nürtingen, Stuttgart, Weingarten, Tübingen.		SAXE MEININGEN ,	
		Hildburghausen.	
		SAXE WEIMAR ,	
		Weimar, Eisenach.	
		OLDENBURG ,	
		Oldenburg, Birkenfeld.	
		HOLSTEIN ,	
		Segeberg, f. 1780.	
		SAXE-ALTENBURG ,	
		Altenburg.	
		NASSAU ,	
		Idstein.	
		BRUNSWICK ,	
		Wolfenbüttel.	
		LUXEMBURG ,	
		Luxemburg.	
		LIPPE ,	
		Detmold.	
		MECKLENBURG SCHWERIN ,	
		Ludwigslust.	
		MECKLENBURG STRELITZ ,	
		Mirow.	
		SCHWARZBURG ,	
		Rudolstadt.	
		LUBECK ,	
		BREMEN,	
		HAMBURG,	
		FRANKFORT	

RESULTS OF NORMAL SCHOOL SYSTEM.

Alexander Dallas Bache, LL. D., Superintendent of the United States Coast Survey, in a "*Report on Education in Europe*," to the Trustees of the Girard College of Orphans, Philadelphia, in 1838, remarks as follows :

"When education is to be rapidly advanced, Seminaries for Teachers offer the means of securing this result. An eminent teacher is selected as Director of the Seminary ; and by the aid of competent assistants, and while benefiting the community by the instruction given in the schools attached to the Seminary, trains, yearly, from thirty to forty youths in the enlightened practice of his methods ; these, in their turn, become teachers of schools, which they are fit at once to conduct, without the failures and mistakes usual with novices ; for though beginners in name, they have acquired, in the course of the two or three years spent at the Seminary, an experience equivalent to many years of unguided efforts. This result has been fully realized in the success of the attempts to spread the methods of Pestalozzi and others through Prussia. The plan has been adopted, and is yielding its appropriate fruits in Holland, Switzerland, France, and Saxony ; while in Austria, where the method of preparing teachers by their attendance on the primary schools is still adhered to, the schools are stationary, and behind those of Northern and Middle Germany.

These Seminaries produce a strong *esprit de corps* among teachers, which tends powerfully to interest them in their profession, to attach them to it, to elevate it in their eyes, and to stimulate them to improve constantly upon the attainments with which they may have commenced its exercise. By their aid a standard of examination in the theory and practice of instruction is furnished, which may be fairly exacted of candidates who have chosen a different way to obtain access to the profession."

Hon. Horace Mann, in his "*Seventh Annual Report as Secretary of the Board of Education in Massachusetts*," in which he gives an account of an educational tour through the principal countries of Europe in the summer of 1843, says :

"Among the nations of Europe, Prussia has long enjoyed the most distinguished reputation for the excellence of its schools. In reviews, in speeches, in tracts, and even in graver works devoted to the cause of education, its schools have been exhibited as models for the imitation of the rest of Christendom. For many years, scarce a suspicion was breathed that the general plan of education in that kingdom was not sound in theory and most beneficial in practice. Recently, however, grave charges have been preferred against it by high authority. The popular traveler, Laing, has devoted several chapters of his large work on Prussia to the disparagement of its school system. An octavo volume, entitled '*The Age of Great Cities*,' has recently appeared in England, in which that system is strongly condemned ; and during the pendency of the famous '*Factories' Bill*' before the British House of Commons, in 1843, numerous tracts were issued from the English press, not merely calling in question, but strongly denouncing, the whole plan of education in Prussia, as being not only designed to produce, but as actually producing, a spirit of blind acquiescence to arbitrary power, in things spiritual as well as temporal—as being, in fine, a system of education adapted to enslave, and not to enfranchise, the human mind. And even in some parts of the United States—the very nature and essence of whose institutions consist in the idea that the people are wise enough to distinguish between what is right and what is wrong—even here, some have been illiberal enough to condemn, in advance, every thing that savors of the Prussian system, because that system is sustained by arbitrary power.

But allowing all these charges against the Prussian system to be true, there were still two reasons why I was not deterred from examining it.

In the first place, the evils imputed to it were easily and naturally separable

from the good which it was not denied to possess. If the Prussian schoolmaster has better methods of teaching reading, writing, grammar, geography, arithmetic, &c., so that, in half the time, he produces greater and better results, surely we may copy his modes of teaching these elements without adopting his notions of passive obedience to government, or of blind adherence to the articles of a church. By the ordinance of nature, the human faculties are substantially the same all over the world, and hence the best means for their development and growth in one place, must be substantially the best for their development and growth everywhere. The spirit which shall control the action of these faculties when matured, which shall train them to self-reliance or to abject submission, which shall lead them to refer all questions to the standard of reason or to that of authority,—this spirit is wholly distinct and distinguishable from the manner in which the faculties themselves ought to be trained; and we may avail ourselves of all improved methods in the earlier processes, without being contaminated by the abuses which may be made to follow them. The best style of teaching arithmetic or spelling has no necessary or natural connection with the doctrine of hereditary right; and an accomplished lesson in geography or grammar commits the human intellect to no particular dogma in religion.

In the second place, if Prussia can pervert the benign influences of education to the support of arbitrary power, we surely can employ them for the support and perpetuation of republican institutions. A national spirit of liberty can be cultivated more easily than a national spirit of bondage; and if it may be made one of the great prerogatives of education to perform the unnatural and unholy work of making slaves, then surely it must be one of the noblest instrumentalities for rearing a nation of freemen. If a moral power over the understandings and affections of the people may be turned to evil, may it not also be employed for the highest good?

Besides, a generous and impartial mind does not ask whence a thing comes, but what it is. Those who, at the present day, would reject an improvement because of the place of its origin, belong to the same school of bigotry with those who inquired if any good could come out of Nazareth; and what infinite blessings would the world have lost had that party been punished by success! Throughout my whole tour, no one principle has been more frequently exemplified than this,—that wherever I have found the best institutions,—educational, reformatory, charitable, penal, or otherwise,—there I have always found the greatest desire to know how similar institutions were administered among ourselves; and where I have found the worst, there I have found most of the spirit of self-complacency, and even an offensive disinclination to hear of better methods.

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All the subjects I have enumerated were taught in all the schools I visited, whether in city or country, for the rich or for the poor. In the lowest school in the smallest and obscurest village, or for the poorest class in overcrowded cities; in the schools connected with pauper establishments, with houses of correction, or with prisons,—in all these, there was a teacher of *mature age*, of simple, unaffected, and decorous manners, benevolent in his expression, kind and genial in his intercourse with the young, and of such attainments and resources as qualified him not only to lay down the abstract principles of the above range of studies, but, by familiar illustration and apposite example, to commend them to the attention of the children.

I speak of the teachers whom I saw, and with whom I had more or less of personal intercourse; and, after some opportunity for the observation of public assemblies or bodies of men, I do not hesitate to say, that if those teachers were brought together, in one body, I believe they would form as dignified, intelligent, benevolent-looking a company of men as could be collected from the same amount of population in any country. They were alike free from arrogant pretension and from the affectation of humility. It has been often remarked, both in England and in this country, that the nature of a school-teacher's occupation exposes him, in some degree, to overbearing manners, and to dogmatism in the statement of his opinions. Accustomed to the exercise of supreme authority, moving among those who are so much his inferiors in point of attainment, perhaps it is proof of a very well-balanced mind, if he keeps himself free from assumption

in opinion and haughtiness of demeanor. Especially are such faults or vices apt to spring up in weak or ill-furnished minds. A teacher who cannot rule by love, must do so by fear. A teacher who cannot supply material for the activity of his pupils' minds by his talent, must put down that activity by force. A teacher who cannot answer all the questions and solve all the doubts of a scholar as they arise, must assume an awful and mysterious air, and must expound in oracles, which themselves need more explanation than the original difficulty. When a teacher knows much, and is master of his whole subject, he can afford to be modest and unpretending. But when the head is the only text-book, and the teacher has not been previously prepared, he must, of course, have a small library. Among all the Prussian and Saxon teachers whom I saw, there were not half a dozen instances to remind one of those unpleasant characteristics,—what Lord Bacon would call the '*idol of the tribe*,' or profession,—which sometimes degrade the name and disparage the sacred calling of a teacher. Generally speaking, there seemed to be a strong love for the employment, always a devotion to duty, and a profound conviction of the importance and sacredness of the office they filled. The only striking instance of disingenuousness or attempt at deception, which I saw, was that of a teacher who looked over the manuscript books of a large class of his scholars, selected the best, and, bringing it to me, said, 'In seeing one you see all.'

Whence came this beneficent order of men, scattered over the whole country, molding the character of its people, and carrying them forward in a career of civilization more rapidly than any other people in the world are now advancing! This is a question which can be answered only by giving an account of the Seminaries for Teachers.

From the year 1820 to 1830 or 1835, it was customary, in all accounts of Prussian education, to mention the number of these Seminaries for Teachers. This item of information has now become unimportant, as there are seminaries sufficient to supply the wants of the whole country. The stated term of residence at these seminaries is three years. Lately, and in a few places, a class of preliminary institutions has sprung up,—institutions where pupils are received in order to determine whether they are fit to become candidates to be candidates. As a pupil of the seminary is liable to be set aside for incompetency, even after a three years' course of study; so the pupils of these preliminary institutions, after having gone through with a shorter course, are liable to be set aside for incompetency to become competent.

Let us look for a moment at the guards and securities which, in that country, environ this sacred calling. In the first place, the teacher's profession holds such a high rank in public estimation, that none who have failed in other employments or departments of business, are encouraged to look upon school-keeping as an ultimate resource. Those, too, who, from any cause, despair of success in other departments of business or walks of life, have very slender prospects in looking forward to this. These considerations exclude at once all that inferior order of men who, in some countries, constitute the main body of the teachers. Then come,—though only in some parts of Prussia,—these preliminary schools, where those who wish eventually to become teachers, go, in order to have their natural qualities and adaptation for school-keeping tested; for it must be borne in mind that a man may have the most unexceptionable character, may be capable of mastering all the branches of study, may even be able to make most brilliant recitations from day to day; and yet, from some coldness or repulsiveness of manner, from harshness of voice, from some natural defect in his person or in one of his senses, he may be adjudged an unsuitable model or archetype for children to be conformed to, or to grow by; and hence he may be dismissed at the end of his probationary term of six months. At one of these preparatory schools, which I visited, the list of subjects at the examination,—a part of which I saw,—was divided into two classes, as follows:—1. Readiness in thinking, German language, including orthography and composition, history, description of the earth, knowledge of nature, thorough bass, calligraphy, drawing. 2. Religion, knowledge of the Bible, knowledge of nature, mental arithmetic, singing, violin-playing, and readiness or facility in speaking. The examination in all the branches of the first class was conducted in writing. To test a pupil's readiness in thinking, for instance, several topics for composition are given out, and, after the lapse of a cer-

tain number of minutes, whatever has been written must be handed in to the examiners. So questions in arithmetic are given, and the time occupied by the pupils in solving them, is a test of their quickness of thought, or power of commanding their own resources. This facility, or faculty, is considered of great importance in a teacher.* In the second class of subjects the pupils were examined orally. Two entire days were occupied in examining a class of thirty pupils, and only twenty-one were admitted to the seminary school;—that is, only about two-thirds were considered to be eligible to become eligible, as teachers, after three years' further study. Thus, in this first process, the chaff is winnowed out, and not a few of the lighter grains of the wheat.

It is to be understood that those who enter the seminary directly, and with out this preliminary trial, have already studied, under able masters in the Common Schools, at least all the branches I have above described. The first two of the three years, they expend mainly in reviewing and expanding their elementary knowledge. The German language is studied in its relations to rhetoric and logic, and as æsthetic literature; arithmetic is carried out into algebra and mixed mathematics; geography into commerce and manufactures, and into a knowledge of the various botanical and zoological productions of the different quarters of the globe; linear drawing into perspective and machine drawing, and the drawing from models of all kinds, and from objects in nature, &c. The theory and practice, not only of vocal, but of instrumental music, occupy much time. Every pupil must play on the violin; most of them play on the organ, and some on other instruments. I recollect seeing a Normal class engaged in learning the principles of Harmony. The teacher first explained the principles on which they were to proceed. He then wrote a bar of music upon the black-board, and called upon a pupil to write such notes for another part or accompaniment, as would make *harmony* with the first. So he would write a bar with certain intervals, and then require a pupil to write another, with such intervals as, according to the principles of musical science, would correspond with the first. A thorough course of reading on the subject of education is undertaken, as well as a more general course. Bible history is almost committed to memory. Connected with all the seminaries for teachers are large Model or Experimental Schools. During the last part of the course much of the students' time is spent in these schools. At first they go in and look on in silence, while an accomplished teacher is instructing a class. Then they themselves commence teaching under the eye of such a teacher. At last they teach a class alone, being responsible for its proficiency, and for its condition as to order, &c., at the end of a week or other period. During the whole course, there are lectures, discussions, compositions, &c., on the theory and practice of teaching. The essential qualifications of a candidate for the office, his attainments, and the spirit of devotion and of religious fidelity in which he should enter upon his work; the modes of teaching the different branches; the motive-powers to be applied to the minds of children; dissertations upon the different natural dispositions of children, and, consequently, the different ways of addressing them, of securing their confidence and affection, and of winning them to a love of learning and a sense of duty; and especially the sacredness of the teacher's profession,—the idea that he stands, for the time being, in the place of a parent, and therefore that a parent's responsibilities rest upon him, that the most precious hopes of society are committed to his charge, and that on him depends, to a great extent, the temporal and perhaps the future well-being of hundreds of his fellow-creatures,—these are the conversations, the ideas, the feelings, amid which the candidate for teaching spends his probationary years. This is the daily atmosphere he breathes. These are the sacred, elevating, invigorating influences constantly pouring in upon his soul. Hence, at the expiration of his course, he leaves the seminary to enter upon his profession, glowing with enthusiasm for the noble cause he has espoused, and strong in his resolves to perform its manifold and momentous duties.

Here, then, is the cause of the worth and standing of the teachers, whom I had the pleasure and the honor to see. As a body of men, their character is

* The above described is a very common method of examining in the gymnasia and higher seminaries of Prussia. Certain sealed subjects for an exercise are given to the students: they are then locked up in a room, each by himself, and at the expiration of a given time, they are enlarged, and it is seen what each one has been able to make out of his faculties.

more enviable than that of either of the three, so-called, 'professions. They have more benevolence and self-sacrifice than the legal or medical, while they have less of sanctimoniousness and austerity, less of indisposition to enter into all the innocent amusements and joyous feelings of childhood, than the clerical. They are not unmindful of what belongs to men while they are serving God; nor of the duties they owe to this world while preparing for another.

On reviewing a period of six weeks, the greater part of which I spent in visiting schools in the north and middle of Prussia and in Saxony (excepting, of course, the time occupied in going from place to place), entering the schools to hear the first recitation in the morning, and remaining till the last was completed at night, I call to mind three things about which I cannot be mistaken. In some of my opinions and inferences I may have erred, but of the following facts there can be no doubt:

1. During all this time, I never saw a teacher hearing a lesson of any kind (excepting a reading or spelling lesson), *with a book in his hand*

2. I never saw a teacher *sitting* while hearing a recitation.

3. Though I saw hundreds of schools, and thousands,—I think I may say, within bounds, tens of thousands of pupils,—*I never saw one child undergoing punishment, or arraigned for misconduct. I never saw one child in tears from having been punished, or from fear of being punished.*

During the above period, I witnessed exercises in geography, ancient and modern; in the German language,—from the explanation of the simplest words up to belles-lettres disquisitions, with rules for speaking and writing;—in arithmetic, algebra, geometry, surveying, and trigonometry; in book-keeping; in civil history, ancient and modern; in natural philosophy; in botany and zoology; in mineralogy, where there were hundreds of specimens; in the endless variety of the exercises in thinking, knowledge of nature, of the world, and of society; in Bible history and in Bible knowledge;—and, as I before said, in no one of these cases did I see a teacher with a book in his hand. His book,—his books,—his library, was in his head. Promptly, without pause, without hesitation, from the rich resources of his own mind, he brought forth whatever the occasion demanded. I remember calling one morning at a country school in Saxony, where everything about the premises, and the appearance, both of teacher and children, indicated very narrow pecuniary circumstances. As I entered, the teacher was just ready to commence a lesson or lecture on French history. He gave not only the events of a particular period in the history of France, but mentioned, as he proceeded, all the contemporary sovereigns of neighboring nations. The ordinary time for a lesson here, as elsewhere, was an hour. This was somewhat longer, for, toward the close, the teacher entered upon a train of thought from which it was difficult to break off, and rose to a strain of eloquence which it was delightful to hear. The scholars were all absorbed in attention. They had paper, pen, and ink before them, and took brief notes of what was said. When the lesson touched upon contemporary events in other nations,—which, as I suppose, had been the subject of previous lessons,—the pupils were questioned concerning them. A small text-book of history was used by the pupils, which they studied at home.

I ought to say further, that I generally visited schools without guide, or letter of introduction,—presenting myself at the door, and asking the favor of admission. Though I had a general order from the Minister of Public Instruction, commanding all schools, gymnasia, and universities in the kingdom to be opened for my inspection, yet I seldom exhibited it, or spoke of it,—at least not until I was about departing. I preferred to enter as a private individual, an uncommanded visitor.

I have said that I saw no teacher *sitting* in his school. Aged or young, all stood. Nor did they stand apart and aloof in sullen dignity. They mingled with their pupils, passing rapidly from one side of the class to the other, animating, encouraging, sympathizing, breathing life into less active natures, assuring the timid, distributing encouragement and endearment to all. The looks of the Prussian teacher often have the expression and vivacity of an actor in a play. He gesticulates like an orator. His body assumes all the attitudes, and his face puts on all the variety of expression, which a public speaker would do if haranguing a large assembly on a topic vital to their interests.

It may seem singular, and perhaps to some almost ludicrous, that a teacher in expounding the first rudiments of handwriting, in teaching the difference between a hair-stroke and a ground-stroke, or how an *l* may be turned into a *b*, or a *u* into a *v*, should be able to work himself up into an oratorical fervor; should attitudinize, and gesticulate, and stride from one end of the class to the other, and appear in every way to be as intensely engaged as an advocate when arguing an important cause to a jury;—but, strange as it may seem, it is nevertheless true; and before five minutes of such a lesson had elapsed, I have seen the children wrought up to an excitement proportionally intense, hanging upon the teacher's lips, catching every word he says, and evincing great elation or depression of spirits, as they had or had not succeeded in following his instructions. So I have seen the same rhetorical vehemence on the part of the teacher, and the same interest and animation on the part of the pupils, during a lesson on the original sounds of the letters,—that is, the difference between the long and the short sound of a vowel, or the different ways of opening the mouth in sounding the consonants *b* and *p*. The zeal of the teacher enkindles the scholars. He charges them with his own electricity to the point of explosion. Such a teacher has no idle, mischievous, whispering children around him, nor any occasion for the rod. He does not make desolation of all the active and playful impulses of childhood, and call it peace; nor, to secure stillness among his scholars, does he find it necessary to ride them with the nightmare of fear. I rarely saw a teacher put questions with his lips alone. He seems so much interested in his subject (though he might have been teaching the same lesson for the hundredth or five hundredth time), that his whole body is in motion;—eyes, arms, limbs, all contributing to the impression he desires to make; and, at the end of an hour, both he and his pupils come from the work all glowing with excitement.

Suppose a lawyer in one of our courts were to plead an important cause before a jury, but instead of standing and extemporizing, and showing by his gestures, and by the energy and ardor of his whole manner, that he felt an interest in his theme, instead of rising with his subject and coruscating with flashes of genius and wit, he should plant himself lazily down in a chair, read from some old book which scarcely a member of the panel could fully understand, and, after droning away for an hour, should leave them, without having distinctly impressed their minds with one fact, or led them to form one logical conclusion;—would it be any wonder if he left half of them joking with each other, or asleep;—would it be any wonder,—provided he were followed on the other side by an advocate of brilliant parts, of elegant diction and attractive manner,—who should pour sunshine into the darkest recesses of the case,—if he lost not only his own reputation, but the cause of his client also!

These incitements and endearments of the teacher, this personal ubiquity, as it were, among all the pupils in the class, prevailed much more, as the pupils were younger. Before the older classes, the teacher's manner became calm and didactic. The habit of attention being once formed, nothing was left for subsequent years or teachers, but the easy task of maintaining it. Was there ever such a comment as this on the practice of hiring cheap teachers because the school is young, or incompetent ones because it is backward!

In Prussia and in Saxony, as well as in Scotland, the power of commanding and retaining the attention of a class is held to be a *sine qua non* in a teacher's qualifications. If he has not talent, skill, vivacity, or resources of anecdote and wit, sufficient to arouse and retain the attention of his pupils during the accustomed period of recitation, he is deemed to have mistaken his calling, and receives a significant hint to change his vocation.

Take a group of little children to a toy-shop, and witness their outbursting eagerness and delight. They need no stimulus of badges or prizes to arrest or sustain their attention; they need no quickening of their faculties by rod or ferule. To the exclusion of food and sleep they will push their inquiries, until shape, color, quality, use, substance, both external and internal, of the objects around them, are exhausted; and each child will want the show-man wholly to himself. But in all the boundless variety and beauty of nature's works; in that profusion and prodigality of charms with which the Creator has adorned and enriched every part of his creation; in the delights of affection; in the ecstatic joys of benevolence; in the absorbing interest which an unsophisticated conscience

instinctively takes in all questions of right and wrong ;—in all these, is there not as much to challenge and command the attention of a little child, as in the curiosities of a toy-shop ! When as much of human art and ingenuity shall have been expended upon teaching as upon toys, there will be less difference between the cases.

The third circumstance I mentioned above was the beautiful relation of harmony and affection which subsisted between teacher and pupils. I cannot say that the extraordinary fact I have mentioned was not the result of chance or accident. Of the probability of that, others must judge. I can only say that, during all the time mentioned, I never saw a blow struck, I never heard a sharp rebuke given, I never saw a child in tears, nor arraigned at the teacher's bar for any alleged misconduct. On the contrary, the relation seemed to be one of duty first, and then affection, on the part of the teacher,—of affection first, and then duty, on the part of the scholar. The teacher's manner was better than parental, for it had a parent's tenderness and vigilance, without the foolish dotings or indulgences to which parental affection is prone. I heard no child ridiculed, sneered at, or scolded, for making a mistake. On the contrary, whenever a mistake was made, or there was a want of promptness in giving a reply, the expression of the teacher was that of grief and disappointment, as though there had been a failure, not merely to answer the question of a master, but to comply with the expectations of a friend. No child was disconcerted, disabled, or bereft of his senses, through fear. Nay, generally, at the ends of the answers, the teacher's practice is to encourage him with the exclamation, 'good,' 'right,' 'wholly right,' &c., or to chock him, with his slowly and painfully articulated 'no,' and this is done with a tone of voice that marks every degree of *plus* and *minus* in the scale of approbation and regret. When a difficult question has been put to a young child, which tasks all his energies, the teacher approaches him with a mingled look of concern and encouragement ; he stands before him, the light and shade of hope and fear alternately crossing his countenance ; he lifts his arms and turns his body,—as a bowler who has given a wrong direction to his bowl will writhen his person to bring the ball back upon its track ;—and finally, if the little wrestler with difficulty triumphs, the teacher felicitates him upon his success, perhaps seizes and shakes him by the hand, in token of congratulation ; and, when the difficulty has been really formidable, and the effort triumphant, I have seen the teacher catch up the child in his arms and embrace him, as though he were not able to contain his joy. At another time, I have seen a teacher actually clap his hands with delight at a bright reply ; and all this has been done so naturally and so unaffectedly as to excite no other feeling in the residue of the children than a desire, by the same means, to win the same caresses. What person worthy of being called by the name, or of sustaining the sacred relation of a parent, would not give any thing, bear any thing, sacrifice any thing, to have his children, during eight or ten years of the period of their childhood, surrounded by circumstances, and breathed upon by sweet and humanizing influences, like these !"

The Rev. Egerton Ryerson, D. D., Chief Superintendent of Schools, in a "*Report on a System of Public Elementary Instruction for Upper Canada*," after quoting the above passages from Mr. Mann's report, remarks :

"In the above summary and important statements on this subject, by the able Secretary of the Massachusetts Board of Education, I fully concur, with two slight exceptions. In one instance I did see a boy in tears (in Berlin) when removed to a lower class on account of negligence in his school preparations. I did see one or two old men sitting *occasionally* in school. With these exceptions, my own similar inquiries and experience of nearly three months in Southern and Western, as well as Northern and Middle Germany, and I might add a longer period of like investigations in Switzerland, Holland, Belgium and France—enable me not only to subscribe to the statements of the Hon. Mr. Mann, but would enable me, were it necessary, to illustrate them by various details of visits to individual schools."

Professor Lemuel Stephens, now of Girard College of Orphans, Philadelphia, in a "*Letter addressed to Hon. F. R. Shunk, Superintendent of Common Schools in Pennsylvania*," from Berlin, in 1843, remarks:

"To determine absolutely the influence which teachers' seminaries have had upon the state of popular education in Germany, would be a matter of great difficulty, owing to the gradual growth of these institutions. One thing is certain, that the improvement of the schools has followed, hand in hand, the multiplication and improvement of the seminaries. Perhaps the value of these institutions can be shown in no light so advantageously, as by comparing the class of common school teachers in Germany, at the present moment, with the same class in England and America. In this country one is struck with the zeal and common spirit which a common education has imparted to the whole body. They have been for three or four years under the instruction of men practically and scientifically acquainted with the best principles of teaching; and what is an indispensable part of their preparation, they have had the opportunity of testing the value, and of becoming familiar with the application of these principles in practice. During the latter part of their course they have been accustomed, under the eye of their teachers, to instruct a school of children, by which means the art and the theory have kept pace with each other. Some knowledge of the human mind, and some just conception of the great problem of education which they are engaged in solving, inspires them with self-respect, with earnestness and love of their profession. Once raised above the idea that education consists alone in drilling children in a few useful accomplishments, a sense of the dignity of the work of operating on, and forming other minds, causes them to overlook the humble outward conditions of a village school, and fortifies them against the seductions of false ambition.

Leaving out of the question the great immediate benefit of these seminaries in fitting teachers better to fill their office, I believe that the professional spirit, the *esprit du corps*, which they create, is productive of results which are alone sufficient to recommend these institutions. It is this common spirit which secures the progress of the young teacher after he has entered into active service, and saves him from the besetting sin of rushing into a mechanical routine, by keeping up a lively interchange of opinions, and making him acquainted with the successes and improvements of other teachers. The means for this intercourse, are conferences and periodicals of education. In every German city, in which I have made the inquiry, I have learned that the teachers from the different schools are accustomed to come together, at stated times, for the purpose of mutual improvement: even in the villages of Hesse, and the mountainous part of Saxony, I found that the teachers, from villages miles apart, held their monthly conferences for debate and lecture.

In Germany there are no less than thirty periodicals devoted exclusively to education. In these all questions of interest to teachers are discussed; the best method of instructing explained, all new school books noticed and criticised: the arrangements and organizations of distinguished schools described, and accounts given from time to time of the progress of education in other states. The General School Gazette, which has particularly attracted my attention, has a list of more than one hundred regular contributors. The journals are open to all teachers to make known their experience, or to ask for information. The able director of the seminary in this city, who is at the same time the conductor of one of these periodicals, informs me that one or more of them finds its way to every common school teacher. They are furnished so low that he can generally afford to take them, or if not, they are taken by the district for his benefit. By these means an active spirit of inquiry is kept up; the improvements of individuals become the property of all; the obscure village teacher feels that he is a member of a large and respectable class, engaged in the great work of human improvement; and love and zeal for his profession are enkindled. There is union, sympathy, generous emulation and mutual improvement. Among the members of a profession, there is a common principle of life. It is a type of organic life, which contains within itself the principle of development and growth.

A valuable ordinance passed in Prussia, in 1826, and renewed in 1846, requires a director of a seminary to travel about once a year, and visit a certain part of the schools within his circuit. He makes himself acquainted with the

state of the school, listens to the instruction given, takes part himself in the same, and gives to the teacher such hints for improvement as his observation may suggest. The results of his yearly visits he presents in the form of a report to the school authorities of the province. This occasional visitation is very useful in clearing up the dark corners of the land, correcting abuses, and giving an impulse, from time to time, to teachers, who might otherwise sink into apathy and neglect. To render the efficacy of the seminaries more complete, it is provided that at the end of three years after leaving the seminary, the young teachers shall return to pass a second examination. And further, by an ordinance in 1826, it is provided, 'To the end, that the beneficial influence of the seminary may extend itself to those teachers already established, who either require further instruction, or who in their own cultivation and skill in office do not advance, perhaps even recede; it is required that such teachers be recalled into the seminary for a shorter or longer time, as may be needful for them, in order, either to pass through a whole methodical course, or to practice themselves in particular departments of instruction.' By this organization it is very easy to see that the whole system of popular instruction is brought under the influence of the most able teachers; their skill is made to tell upon the character of the class; and the assurance is given that the work of education is advancing surely and consequently toward perfection.

It is only by the distinct division of the objects of human industry and knowledge, into separate arts and sciences, that their advancement can be insured. The necessity for the division of labor in the mechanic arts is well enough understood. A necessity for this division, in intellectual pursuits, exists in a by no means less degree. So long as the science of education depends for its development upon the casual contributions of men of all professions, without being made the business of any, it must grope its way hither and thither by the light of occasional flashes, instead of being guided on by a steady flame.

The views of certain men on education are known among us, but so far as pedagogics from being cultivated as a science, we feel ourselves as yet hardly authorized to use the word. I am far from denying that we have many very good teachers; but they stand separate and alone. Their influence rarely extends beyond the sphere of their own schools. Their experience has furnished them with excellent practical rules for their own procedure, but these rules have perhaps never been expressed in words, much less their truth demonstrated by a reduction of the same to scientific principles. They are content to be known as possessing the mysterious talent of a skillful teacher, and their wisdom dies with them. It is owing to the isolated position in which teachers by profession find themselves, that the didactic skill they may have acquired, even when it rises above the character of a blind faculty, and is founded on the enlightened conclusions of science, still remains almost without influence on the wrong ideas in education which may be in vogue around them. To quote a remark of Dr. Harnisch: 'we have had, now and then, capable teachers without possessing seminaries: we still find such *singly* in states which yet have no seminaries, but it can not be denied that seminaries are most effectual levers for elevating the condition of common schools, and such they have sufficiently proved themselves to be in latter years.'

* * * * *

"How far may we avail ourselves of the German plan of popular education? It will be borne in mind, that the Prussian system is so far voluntary that it is left entirely to the parent where, and in what manner, his child shall be educated, only requiring that the years, from six till fourteen, shall be devoted to instruction, and that a certain amount of knowledge shall be obtained. The Swiss republics have placed their public schools on the same basis that the German states have done, their laws are essentially the same, and teachers have therefore, there as well as in Germany, the character of public servants. The great feature of the Prussian system, which it is both suitable and highly desirable for us to imitate, is that which I have already described, namely: the provision therein made for the education of common school teachers. This appears to me the only radical reform, and the only means of putting public education in a steady and consequent train of improvement.

To apply to ourselves the advantages which I have already stated as flowing from this measure—It will raise the employment of teaching among us to a regular profession, and introduce generally consistent and rational methods of

instructing. It will create among teachers, devotion to their office, and a desire for co-operation. This desire will manifest itself in the organization of unions for conference, and in the establishment and support of many periodicals. The higher character of teachers, and the improved state of the schools, will bring them respect, and a better remuneration for their services. The higher value set upon education, the immense contrast between the efficacy of a constant, and that of a half-yearly school, and I must add, the *impossibility of getting good teachers for the latter*, will gradually do away with this great evil under which our school system suffers. The permanent settlement of teachers, rendering much less the annual accession to the profession necessary to keep the schools supplied, will, as I have shown, obviate all difficulty on the score of numbers. The science of the human mind and its cultivation, this vitally important branch of a nation's literature, will be developed among us, and its blessings will be richly manifested in the better cultivation of all the sciences and arts of life.

Such is a scanty outline of the benefits which the experience of other countries, and reason, show us will follow the proper education of our teachers. I do not mean to say that Germany has already realized all these benefits. It is important to observe that the reform in education in this country, goes out from the government, not from the people themselves, who rather passively submit to its operation, than actively co-operate in giving it efficacy. This, with other grounds before stated, necessarily make popular education in Germany productive of less results than in our own country. * *

In the establishment of teachers' seminaries, their utility and success will depend entirely upon their appropriate and perfect organization. False economy has often attempted to provide for the education of primary teachers, by making the seminary an appendage to a high school, or an academy. Thirty years ago this arrangement was not uncommon in Germany; and later the experiment has been tried in the State of New York. * * If it were needed, to strengthen the evidence of the inefficiency of this system, I might easily quote the testimony of the most able teachers of Germany to this effect. Perhaps no department of education requires a more peculiar treatment, and more calls for the undivided zeal and energy of those who have the conduct of it, than the preparation of teachers.

Every thing depends on making the seminaries for teachers, separate and independent establishments, with a careful provision for a thorough, theoretical and practical preparation for all the duties of the common school. In the experiment of introducing teachers' seminaries into our country, there is a danger that we shall be too sparing in the number of teachers employed in conducting them. Seminaries conducted by one or two teachers can not be otherwise than imperfect; and while but little good would come from them, there is great danger that their failure would serve to bring the cause into disrepute."

III. COURSE OF INSTRUCTION

IN THE PRIMARY SCHOOLS

OF GERMANY.

Rev. Calvin E. Stowe, D. D., in 1839, while Professor of Biblical Literature in Lane Seminary, Cincinnati, Ohio, visited Europe, and on his return submitted to the General Assembly of Ohio, in December, 1839, a "Report on Elementary Public Instruction in Europe," in which he thus describes the course of instruction pursued in the Primary Schools of Germany, particularly of Prussia and Wirtemberg.

The whole course comprises eight years, and includes children from the ages of six to fourteen; and it is divided into four parts, of two years each. It is a first principle, that the children be well accommodated as to house and furniture. The school-room must be well constructed, the seats convenient, and the scholars made comfortable, and kept interested. The younger pupils are kept at school but four hours in the day—two in the morning and two in the evening, with a recess at the close of each hour. The older, six hours, broken by recesses as often as is necessary. Most of the school-houses have a bathing-place, a garden, and a mechanic's shop attached to them, to promote the cleanliness and health of the children, and to aid in mechanical and agricultural instruction. It will be seen by the schedule which follows, that a vast amount of instruction is given during these eight years; and lest it should seem that so many branches must confuse the young mind, and that they must necessarily be but partially taught, I will say, in the outset, that the industry, skill, and energy of teachers regularly trained to their business, and depending entirely upon it; the modes of teaching; the habit of always finishing whatever is begun; the perfect method which is preserved; the entire punctuality and regularity of attendance on the part of the scholars; and other things of this kind, facilitate a rapidity and exactness of acquisition and discipline, which may well seem incredible to those who have never witnessed it.

The greatest care is taken that acquisition do not go beyond discipline; and that the taxation of mind be kept entirely and clearly within the constitutional capacity of mental and physical endurance. The studies must never weary, but always interest; the appetite for knowledge must never be cloyed, but be kept always sharp and eager. These purposes are gradually aided by the frequent interchange of topics, and by lively conversational exercises. Before the child is even permitted to learn his letters, he is under conversational instruction, frequently for six months or a year; and then a single week is sufficient to introduce him into intelligible and accurate plain reading.

Every week is systematically divided, and every hour appropriated. The scheme for the week is written on a large sheet of paper, and fixed in a prominent part of the school-room, so that every scholar knows what his business will be for every hour in the week; and the plan thus marked out is rigidly followed.

Through all the parts of the course there are frequent reviews and repetitions, that the impressions left on the mind may be distinct, lively, and permanent. The exercises of the day are always commenced and closed with a short prayer; and the Bible and hymn-book are the first volumes put into the pupils' hands; and these books they always retain and keep in constant use during the whole progress of their education.

The general outline of the eight years' course is nearly as follows:

1. *First part, of two years, including children from six to eight years old; four principal branches, namely:*

1. Logical exercises, or oral teaching in the exercise of the powers of observation and expression, including religious instruction and the singing of hymns.
2. Elements of reading.
3. Elements of writing.
4. Elements of number, or arithmetic.

II. Second part, of two years, including children from eight to ten years old—seven principal branches, namely :

1. Exercises in reading.
2. Exercises in writing.
3. Religious and moral instruction, in select Bible narratives.
4. Language, or grammar.
5. Numbers, or arithmetic.
6. Doctrine of space and form, or geometry.
7. Singing by note, or elements of music.

III. Third part, of two years, including children from ten to twelve years old—eight principal branches, namely :

1. Exercises in reading and elocution.
2. Exercises in ornamental writing, preparatory to drawing.
3. Religious instruction in the connected Bible history.
4. Language, or grammar, with parsing.
5. Real instruction, or knowledge of Nature and the external world, including the first elements of the sciences and the arts of life—of geography and history.
6. Arithmetic continued through fractions and the rules of proportion.
7. Geometry—doctrine of magnitudes and measures.
8. Singing and science of vocal and instrumental music.

IV. Fourth part, of two years, including children from ten to twelve years old—six principal branches, namely :

1. Religious instruction in the religious observation of Nature ; the life and discourses of Jesus Christ ; the history of the Christian religion, in connection with the contemporary civil history ; and the doctrines of Christianity.
2. Knowledge of the world, and of mankind, including civil society, elements of law, agriculture, mechanic arts, manufactures, &c.
3. Language, and exercises in composition.
4. Application of arithmetic and the mathematics to the business of life, including surveying and civil engineering.
5. Elements of drawing.
6. Exercises in singing, and the science of music.

We subjoin a few specimens of the mode of teaching under several of the above divisions.

1. First part—children from six to eight years of age.

1. Conversations between the teacher and pupils, intended to exercise the powers of observation and expression.

The teacher brings the children around him, and engages them in a familiar conversation with himself. He generally addresses them all together, and they all reply simultaneously ; but, whenever necessary, he addresses an individual, and requires the individual to answer alone. He first directs their attention to the different objects in the school-room, their position, form, color, size, materials of which they are made, &c., and requires precise and accurate descriptions. He then requires them to notice the various objects that meet their eye in the way to their respective homes ; and a description of these objects, and the circumstances under which they saw them, will form the subject of the next morning's lesson. Then the house in which they live, the shop in which their father works, the garden in which they walk, &c., will be the subject of the successive lessons ; and in this way for six months or a year, the children are taught to study *things*, to use their own powers of observation, and speak with readiness and accuracy, before books are put into their hands at all. A few specimens will make the nature and utility of this mode of teaching perfectly obvious.

In a school in Berlin, a boy has assigned him for a lesson, a description of the remarkable objects in certain directions from the school-house, which is situated in Little Cathedral street. He proceeds as follows : " When I come out of the school-house into Little Cathedral street, and turn to the right, I soon pass on my left hand the Maria Place, the Gymnasium, and the Anklam Gate. When I come out of Little Cathedral street, I see on my left hand the White Parade Place, and within that, at a little distance, the beautiful statue of Frederick the Great, King of Prussia. It is made of white marble, and stands on a pedestal of variegated marble, and is fenced in with an iron railing. From here, I have on

my right a small place, which is a continuation of the Parade Place; and at the end of this, near the wall, I see St. Peter's Church, or the Wall-street Church, as it is sometimes called. This church has a green yard before it, planted with trees, which is called the Wall Church Yard. St. Peter's Church is the oldest church in the city; it has a little round tower, which looks green, because it is mostly covered with copper, which is made green by exposure to the weather. When I go out of the school-house to the lower part of Little Cathedral street, by the Coal-market, through Shoe street and Carriage street, I come to the Castle. The Castle is a large building, with two small towers, and is built around a square yard, which is called the Castle-yard. In the Castle there are two churches, and the King and his Ministers of State, and the Judges of the Supreme Court, and the Consistory of the Church, hold their meetings there. From the Coal-market, I go through Shoe street to the Hay-market, and adjoining this is the New-market, which was formed after St. Nicholas's Church was burnt, which formerly stood in that place. Between the Hay-market and the New-market is the City Hall, where the officers and magistrates of the city hold their meetings."

If a garden is given to a class for a lesson, they are asked the size of the garden; its shape, which they may draw on a slate with a pencil; whether there are trees in it; what the different parts of a tree are; what parts grow in the spring, and what parts decay in autumn, and what parts remain the same throughout the winter; whether any of the trees are fruit trees; what fruits they bear; when they ripen; how they look and taste; whether the fruit be wholesome or otherwise; whether it is prudent to eat much of it; what plants and roots there are in the garden, and what use is made of them; what flowers there are, and how they look, &c. The teacher may then read them the description of the garden of Eden in the second chapter of Genesis—sing a hymn with them, the imagery of which is taken from the fruits and blossoms of a garden, and explain to them how kind and bountiful God is, who gives us such wholesome plants and fruits, and such beautiful flowers for our nourishment and gratification.

The external heavens also make an interesting lesson. The sky—its appearance and color at different times; the clouds—their color, their varying form and movements; the sun—its rising and setting, its concealment by clouds, its warming the earth and giving it life and fertility, its great heat in summer, and the danger of being exposed to it unprotected; the moon—its appearance by night, full, gibbous, horned; its occasional absence from the heavens; the stars—their shining, difference among them, their number, distance from us, &c. In this connection the teacher may read to them the eighteenth and nineteenth Psalms, and other passages of Scripture of that kind, sing with them a hymn celebrating the glory of God in the creation, and enforce the moral bearing of such contemplations by appropriate remarks. A very common lesson is, the family and family duties, love to parents, love to brothers and sisters, concluding with appropriate passages from Scripture, and singing a family hymn.

2. Elements of reading.

After a suitable time spent in the exercises above described, the children proceed to learn the elements of reading. The first step is to exercise the organs of sound till they have perfect command of their vocal powers; and this, after the previous discipline in conversation and singing, is a task soon accomplished. They are then taught to utter distinctly all the vowel sounds. The characters or letters representing these sounds are then shown and described to them, till the form and power of each are distinctly impressed upon their memories. The same process is then gone through in respect to diphthongs and consonants. Last of all, after having acquired a definite and distinct view of the different sounds, and of the forms of the letters which respectively represent these sounds, they are taught the names of these letters, with the distinct understanding that the name of a letter and the power of a letter are two very different things.

They are now prepared to commence reading. The letters are printed in large form, on square cards; the class stands up before a sort of rack; the teacher holds the cards in his hand, places one upon the rack, and a conversation of this kind passes between him and his pupils: What letter is that? H. He places another on the rack. What letter is that? A. I now put these two letters together, thus, (moving the cards close together,) H A. What sound do these two letters signify? Ha. There is another letter. What letter is that? (putting it on

the rack.) R. I now put this third letter to the other two, thus, HAR. What sound do the three letters make? *Har*. There is another letter. What is it? D. I join this letter to the other three, thus, HARD. What do they all make? *Hard*. Then he proceeds in the same way with the letters F-I-S-T; joins these four letters to the preceding four, HARD-FIST, and the pupils pronounce, *Hard-fist*. Then with the letters E and D, and joins these two to the preceding eight, and the pupils pronounce, *Hard-fisted*. In this way they are taught to read words of any length, (for you may easily add to the above, N-E-S-S, and make *Hard-fistedness*)—the longest as easily as the shortest; and in fact they learn their letters; they learn to read words of one syllable and of several syllables, and to read in plain reading, by the same process, at the same moment. After having completed a sentence, or several sentences, with the cards and rack, they then proceed to read the same words and sentences in their spelling-books.

3. Elements of writing.

The pupils are first taught the right position of the arms and body in writing, the proper method of holding the pen, &c.; and are exercised on these points till their habits are formed correctly. The different marks used in writing are then exhibited to them, from the simple point or straight line, to the most complex figure. The variations of form and position which they are capable of assuming, and the different parts of which the complex figures are composed, are carefully described, and the student is taught to imitate them, beginning with the most simple; then the separate parts of the complex, then the joining of the several parts to a whole, with his pencil and slate. After having acquired facility in this exercise, he is prepared to write with his ink and paper. The copy is written upon the blackboard; the paper is laid before each member of the class, and each has his pen ready in his hand, awaiting the word of his teacher. If the copy be the simple point, or line |, the teacher repeats the syllable *one, one*, slowly at first, and with gradually increasing speed, and at each repetition of the sound the pupils write. In this way they learn to make the mark both correctly and rapidly. If the figure to be copied consists of two strokes, (thus, *1*), the teacher pronounces *one, two—one, two*, slowly at first, and then rapidly, as before; and the pupils make the first mark, and then the second, at the sound of each syllable, as before. If the figure consist of three strokes, (thus, *1*), the teacher pronounces *one, two, three*, and the pupils write as before. So when they come to make letters, the letter *a* has five strokes, thus, *a*. When that is the copy, the teacher says, deliberately, *one, two, three, four, five*, and at the sound of each syllable the different strokes composing the letter are made; the speed of utterance is gradually accelerated, till finally the *a* is made very quickly, and at the same time neatly. By this method of teaching, a plain, neat, and quick hand, is easily acquired.

4. Elements of number, or arithmetic.

In this branch of instruction I saw no improvements in the mode of teaching not already substantially introduced into the best schools of our own country. I need not, therefore, enter into any details respecting them, excepting so far as to say that the student is taught to demonstrate, and perfectly to understand, the reason and nature of every rule before he uses it.

II. Second part—children from eight to ten years of age.

1. Exercises in reading.

The object of these exercises, in this part of the course, is to acquire the habit of reading with accuracy and readiness, with due regard to punctuation, and with reference to orthography. Sometimes the whole class read together, and sometimes an individual by himself, in order to accustom them to both modes of reading, and to secure the advantages of both. The sentence is first gone through with in the class, by distinctly spelling each word as it occurs; then by pronouncing each word distinctly without spelling it; a third time by pronouncing the words and mentioning the punctuation points as they occur. A fourth time, the sentence is read with the proper pauses indicated by the punctuation points, without mentioning them. Finally, the same sentence is read with particular attention to the intonations of the voice. Thus one thing is taken at a time, and pupils must become thorough in each as it occurs, before they proceed to the next. One great benefit of the class reading together is, that each individual has the same amount of exercise as if he were the only one under instruction, his attention

can never falter, and no part of the lesson escapes him. A skillful teacher, once accustomed to this mode of reading, can as easily detect any fault, mispronunciation, or negligence, in any individual, as if that individual were reading alone.

The process is sometimes shortened, and the sentence read only three times, namely: "according to the words, according to the punctuation, according to the life."

2. Exercises in writing.

The pupils proceed to write copies in joining-hand, both large and small, the principles of teaching being essentially as described in the first part of the course. The great object here is, to obtain a neat, swift, business hand. Sometimes, without a copy, they write from the dictation of the teacher; and in most cases instruction in orthography and punctuation is combined with that in penmanship. They are also taught to make and mend their own pens, and in doing this to be economical of their quills.

3. Religious and moral instruction in select Bible narratives.

In this branch of teaching the methods are various, and the teacher adopts the method best adapted, in his judgement, to the particular circumstances of his own school, or to the special objects which he may have in view with a particular class. Sometimes he calls the class around him, and relates to them in his own language, some of the simple narratives of the Bible, or reads it to them in the words of the Bible itself, or directs one of the children to read it aloud; and then follows a friendly, familiar conversation between him and the class respecting the narrative; their little doubts are proposed and resolved, their questions put and answered, and the teacher unfolds the moral and religious instruction to be derived from the lesson, and illustrates it by appropriate quotations from the didactic and preceptive parts of the Scripture. Sometimes he explains to the class a particular virtue or vice, a truth or a duty; and after having clearly shown what it is, he takes some Bible narrative which strongly illustrates the point in discussion, reads it to them, and directs their attention to it, with special reference to the preceding narrative.

A specimen or two of these different methods will best show what they are.

(a) Read the narrative of the birth of Christ, as given by Luke, ii. 1-20. Observe, Christ was born for the salvation of men, so also for the salvation of children. Christ is the children's friend. Heaven rejoices in the good of men. Jesus, though so great and glorious, makes his appearance in a most humble condition. He is the teacher of the poor, as well as of the rich.

With these remarks compare other texts of the Bible.

Jno. iii. 16. "For God so loved the world that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life."

1. Jno. iv. 9. "In this was manifested the love of God toward us; because that God sent his only begotten Son into the world, that we might live through him."

Mark x. 14, 15. "But when Jesus saw it he was much displeased, and said unto them, Suffer little children to come unto me, for of such is the kingdom of God. Verily I say unto you, whosoever shall not receive the kingdom of God as a little child, he shall not enter therein."

And the lesson is concluded with singing a Christmas hymn.

Jesus feeds five thousand men: Jno. vi. 1-14.

God can bless a little so that it will do great good.

Economy suffers nothing to be lost—other texts: Ps. cxlv. 15, 16.

"The eyes of all wait upon thee; and thou givest them their meat in due season."

"Thou openest thy hand, and satisfiest the desire of every living thing."

Matt. vi. 31-33. "Therefore take no thought, saying, what shall we eat? or, What shall we drink? or, Wherewithal shall we be clothed? (for after all these things do the Gentiles seek:) for your heavenly Father knoweth that ye have need of all these things. But seek ye first the kingdom of God, and his righteousness; and all these things shall be added unto you."

Story of Cain and Abel. Gen. iv. 1-16.

Remarks.—Two men may do the same thing externally, and yet the merit of their acts be very different. God looks at the heart. Be careful not to cherish envy or ill will in the heart. You know not to what crimes they may lead you. Remorse and misery of the fratricide—other texts. Matt. xv. 19. Heb. xi. 4. 1 Jno. iii. 12. Job. xxxiv. 32.

"For out of the heart proceed evil thoughts, murders, adulteries, fornications, thefts, false witness, blasphemies."

"By faith Abel offered unto God a more excellent sacrifice than Cain, by which he obtained witness that he was righteous, God testifying of his gifts: and by it he, being dead, yet speaketh."

"Not as Cain, who was of that wicked one, and slew his brother. And wherefore slew he him? Because his own works were evil, and his brother's righteous."

Story of Jesus in the temple. Luke ii. 41-52.

Jesus in his childhood was very fond of learning, (he heard and asked questions.) God's word was his delight, he understood what he heard and read, (men were astonished at his understanding and answers.) He carefully obeyed his parents, (he went with them and was subject to them.) And as he grew up, his good conduct endeared him to God and man. Other texts. Eph. vi. 1-4. Prov. iii. 1-4.

"Children! obey your parents in the Lord; for this is right. Honor thy father and mother, (which is the first commandment with promise,) that it may be well with thee, and thou mayest live long on the earth. And ye fathers! provoke not your children to wrath, but bring them up in the nurture and admonition of the Lord."

"My son, forget not my law; but let thine heart keep my commandments: For length of days, and long life, and peace, shall they add to thee. Let not mercy and truth forsake thee: bind them about thy neck; write them upon the table of thine heart: So shalt thou find favor and good understanding in the sight of God and man."

On the other mode of teaching, the teacher, for example, states the general truth, that God protects and rewards the good, and punishes the bad. In illustration of this he reads to them the narrative of Daniel in the lions' den, and the death which overtook his wicked accusers. Dan. vi. In illustration of the same truth, the escape of Peter, and the miserable death of his persecutor, Herod, may be read. Acts xii.

The teacher may impress upon the mind of his class, that diligence, scrupulous fidelity, and conscientious self-control, are the surest guarantees of success in life; and, in illustration of the statement, read the narrative of Joseph's conduct in his master's house in Egypt, and in the prison, and the results of it. Gen. xxxix. So, also, various incidents in the life of Jesus may be used to great advantage in illustrating different virtues.

It is recommended that the teacher employ, in his instructions, the translation of the Scriptures in general use among the people; but that he occasionally take the original Scriptures and read to the children, in his own translation, and sometimes use simple translations from different authors, that children may early learn to notice the diversities in different faithful translations, and see what they really amount to.

It is scarcely necessary to observe, that a teacher who understands his business, and is faithful to his trust, will scrupulously abstain from sectarian peculiarities, or from casting odium on the tenets of any of the Christian denominations. A man who has not magnanimity or enlargement of mind enough for this, is not fit to be employed as a teacher, even in the humblest branches of knowledge.

4. Language, or grammar.

The knowledge of the native tongue, the ability to use it with correctness, facility, and power, is justly regarded as one of the most important branches of common school instruction. It is the principal object of the *logical exercises*, or, as they may be justly termed, *the exercises in thinking and speaking*, already described as the first subject of study in the first part of the course, before the child has begun to use his book at all.

In this second part of the course, grammar is taught directly and scientifically, yet by no means in a dry and technical manner. On the contrary, technical terms are carefully avoided, till the child has become familiar with the nature and use of the things designated by them, and he is able to use them as the names of ideas which have a definite existence in his mind, and not as awful sounds, dimly shadowing forth some mysteries of science into which he has no power to penetrate.

The first object is to illustrate the different parts of speech, such as the noun, the verb, the adjective, the adverb; and this is done by engaging the pupil in conversation, and leading him to form sentences in which the particular parts of speech to be learned shall be the most important word, and directing his attention to the nature and use of the word in the place where he uses it. For example, let us suppose the nature and use of the adverb are to be taught. The teacher

writes upon the blackboard the words "here, there, near," &c. He then says, "Children, we are all together in this room; by which of the words on the blackboard can you express this?" *Children.* "We are all *here*." *Teacher.* "Now look out of the window and see the church; what can you say of the church with the second word on the blackboard?" *Children.* "The church is *there*." *Teacher.* "The distance between us and the church is not great; how will you express this by a word on the blackboard?" *Children.* "The church is *near*," The fact that these different words express the same sort of relations is then explained, and, accordingly, that they belong to the same class, or are the same part of speech. The variations of these words are next explained. "Children, you say the church is near, but there is a shop between us and the church; what will you say of the shop?" *Children.* "The shop is *nearer*." *Teacher.* "But there is a fence between us and the shop. Now when you think of the distance between us, the shop and the fence, what will you say of the fence?" *Children.* "The fence is *nearest*." So of other adverbs. "The lark sings *well*. Compare the singing of the lark with that of the canary bird. Compare the singing of the nightingale with that of the canary bird." After all the different sorts of adverbs and their variations have in this way been illustrated, and the pupils understand that all words of this kind are called *adverbs*, the definition of the adverb is given as it stands in the grammar, and the book is put into their hands to study the chapter on this topic. In this way the pupil understands what he is doing at every step of his progress, and his memory is never burdened with mere names, to which he can attach no definite meaning.

The mode of teaching the subsequent branches is founded on the same general principles, and it may not be necessary to give particular examples.

5. Numbers, or arithmetic.
6. Doctrine of space and form, or geometry.
7. Singing by note, or elements of music.

The method of teaching music has already been successfully introduced into our own State, and whoever visits the schools of Messrs. Mason or Solomon, in Cincinnati, will have a much better idea of what it is than any description can give; nor will any one who visits these schools entertain a doubt that all children from six to ten years of age, who are capable of learning to read, are capable of learning to sing, and that this branch of instruction can be introduced into all our common schools with the greatest advantage, not only to the comfort and discipline of the pupils, but also to their progress in their other studies.

The students are taught from the blackboard. The different sounds are represented by lines of different lengths, by letters, by figures, and by musical notes; and the pupils are thoroughly drilled on each successive principle before proceeding to the next.

III. *Third part, of two years—children from ten to twelve.*

1. Exercises in reading and elocution.

The objects of these exercises, in this part of the course, is to accustom the pupils to read in a natural and impressive manner, so as to bring the full force of the sentiment on those to whom they read. They are examined in modulation, emphasis, and the various intonations, and they often read sentences from the blackboard in which the various modulations are expressed by musical notes or curved lines.

The evils of drawling and monotone are prevented in the outset by the method of teaching, particularly the practice of the whole class reading together and keeping time. Short and pithy sentences, particularly the Book of Proverbs, are recommended as admirably adapted to exercises of this kind.

2. Ornamental writing, introductory to drawing.

The various kinds of ornamental letters are here practiced upon, giving accuracy to the eye and steadiness to the hand, preparatory to skill in drawing, which comes into the next part of the course. The pupils also practice writing sentences and letters, with neatness, rapidity, and correctness.

3. Religious instruction in the connected Bible history.

The design here is to give to the student a full and connected view of the whole Bible history. For this purpose large tables are made out and hung before the students. These tables are generally arranged in four columns, the first containing the names of the distinguished men during a particular period of Bible history;

the second, the dates; the third, a chronological register of events; and the fourth, the particular passages of the Bible where the history of these persons and events may be found. With these tables before the pupils, the teacher himself, in his own words, gives a brief conversational outline of the principal characters and events within a certain period, and then gives directions that the scriptural passages referred to be carefully read. After this is done, the usual recitation and examination takes place. Some of the more striking narratives, such as the finding of Moses on the banks of the Nile; Abraham offering his son; the journey of the wise men to do homage to Christ; the crucifixion; the conversion of Paul, &c., are committed to memory in the words of the Bible, and the recitation accompanied with the singing of a hymn alluding to these events. The moral instruction to be derived from each historical event is carefully impressed by the teacher. The teacher also gives them a brief view of the history between the termination of the Old and the commencement of the New Testament, that nothing may be wanting to a complete and systematic view of the whole ground. Thus the whole of the historical part of the Bible is studied thoroughly, and systematically, and practically, without the least sectarian bias, and without a moment being spent on a single idea that will not be of the highest use to the scholar during all his future life.

4. Language and grammar.

There is here a continuation of the exercises in the preceding parts of the course, in a more scientific form, together with parsing of connected sentences, and writing from the dictation of the teacher, with reference to grammar, orthography, and punctuation. The same principal alluded to before, of avoiding technical terms till the things represented by those terms are clearly perceived, is here carefully adhered to. A single specimen of the manner in which the modes and tenses of the verb are taught may be sufficient to illustrate my meaning. The teacher writes on the blackboard a simple sentence, as, "The scholars learn well;" and asks the class what sort of a sentence it is. They reply that it is a direct statement of a fact. (Teach.) Put it in the form of a command. (Class.) Scholars, learn well! (Teach.) Put it in a question form. (Class.) Do the scholars learn well? (Teach.) Of a wish. (Class.) May the scholars learn well! (Teach.) Of an exclamation. (Class.) How well the scholars learn! (Teach.) The conditional form. (Class.) If the scholars learn well; or, should the scholars learn well. (Teach.) Of necessity. (Class.) The scholars must learn well. (Teach.) Of ability. (Class.) The scholars can learn well, &c., &c. They are then taught that the direct statement is called the indicative mode of the verb; the command, the imperative mode; the conditional, the subjunctive mode; the wish, the potential mode, &c., &c.; and after this, the book is put into their hands, and they study their lesson as it stands. After this the different tenses of the several modes are taught in the same way.

5. Real instruction, or knowledge of Nature and the external world, including the first elements of the natural sciences, the arts of life, geography, and history. Instruction on this head is directed to the answering of the following questions, namely:

(a) What is man, as it respects his corporeal and intellectual nature?

Here come anatomy and physiology, so far as the structure of the human body is concerned, and the functions of its several parts.

Also the simple elements of mental philosophy. In this connection appropriate texts of Scripture are quoted, as Gen. ii. 7. Ps. cxxxix. 14-16. An appropriate hymn is also sung.

"And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."

"I will praise thee: for I am fearfully and wonderfully made: marvellous are thy works; and that my soul knoweth right well. My substance was not hid from thee, when I was made in secret, and curiously wrought in the lowest parts of the earth. Thine eyes did see my substance, yet being imperfect; and in thy book all my members were written, which in continuance were fashioned, when as yet there was none of them."

(b) What does man need for the preservation and cheerful enjoyment of life, as it respects his body and mind? For his body he needs *food*; the different kinds of food, and the mode of preparing them, are here brought to view; the unwholesomeness of some kinds of food; injuriousness of improper food; cooking;

evils of gluttony. The different kinds of clothing and modes of preparing them ; what sort of dress is necessary to health ; folly and wickedness of vanity and extravagance. *Dwellings*, materials of which houses are constructed ; mode of constructing them ; different trades employed in their construction.

For the mind, man needs *society*, the family and its duties ; the neighborhood and its duties. Intellectual, moral, and religious cultivation ; the school and its duties ; the church and its duties. For the body and mind both, he needs *security* of person and property ; the government ; the legislature ; the courts, &c.

(c) Where and how do men find the means to supply their wants, and make themselves comfortable and happy in this life ?

The vegetable, the mineral, and the animal kingdoms are here brought to view, for materials ; together with agriculture and manufactures, as the means of converting these materials to our use. Geography, with special reference to the productions of countries, and their civil, literary, and religious institutions ; towns, their organization and employments. Geography is sometimes taught by blank charts, to which the students are required to affix the names of the several countries, rivers, mountains, principal towns, &c., and then state the productions and institutions for which they are remarkable. Sometimes the names of countries, rivers, &c., are given, and the pupil is required to construct an outline chart of their localities.

In respect to all the above points, the native country is particularly studied ; its capabilities, its productions, its laws, its institutions, its history, &c., are investigated, with especial reference to its ability of supplying the physical, social, and moral wants of its inhabitants. Under this head the pupils are taught to appreciate their native country, to venerate and love its institutions, to understand what is necessary to their perfection, and to imbibe a spirit of pure and generous patriotism. It is scarcely necessary to add, that all the instruction under this fifth head is confined to the fundamental and simplest principles of the several branches referred to.

6. Arithmetic, continued through fractions and the rules of proportion.

7. Geometry, doctrine of magnitudes and measures.

8. Singing, and science of vocal and instrumental music.

IV. *Fourth part, of two years—children from twelve to fourteen.*

1. Religious instruction, in the religious observation of Nature, the life and discourses of Jesus Christ, the history of the Christian religion, in connection with the cotemporary civil history, and the principal doctrines of the Christian system.

The first topic of instruction mentioned under this head is one of peculiar interest and utility. The pupils are taught to observe, with care and system, the various powers and operations of Nature, and to consider them as so many illustrations of the wisdom, power, and goodness of the Creator ; and at each lesson they are directed to some appropriate passage of the Bible, which they read and commit to memory : and thus the idea is continually impressed on them, that the God of Nature and the God of the Bible are one and the same Being.

For example, as introductory to the whole study, the first chapter of Genesis, together with some other appropriate passage of Scripture, as the 147th Psalm, or the 38th chapter of Job, may be read and committed to memory. The surface of the earth, as illustrating the power and wisdom of God, may be taken as a lesson. Then the varieties of surface, as mountains, valleys, oceans and rivers, continents and islands, the height of mountains, the breadth of oceans, the length of rivers, remarkable cataracts, extended caverns, volcanoes, tides, &c., may be taken into view, and the teacher may impress upon the class the greatness, power, and intelligence necessary for such a creation. The whole is fortified by the application of such a passage as Psalm civ. 1-13.

" Bless the Lord, O my soul ! O Lord my God ! thou art very great ; thou art clothed with honor and majesty. Who coverest thyself with light as with a garment : who stretchest out the heavens like a curtain : who layeth the beams of his chambers in the waters : who maketh the clouds his chariot : who walketh upon the wings of the wind : who maketh his angels spirits ; his ministers a flaming fire. Who laid the foundations of the earth, that it should not be removed forever. Thou coverest it with the deep as with a garment : the waters stood above the mountains. At thy rebuke they fled : at the voice of thy thunder they hasted away. They go up by the mountains : they go down by the valleys unto the place which thou hast founded for them. Thou hast set a bound that they may not pass over ; that they turn not again to cover the earth. He sendeth the springs into the valleys,

which run among the hills. They give drink to every beast of the field; the wild asses quench their thirst. By them shall the fowls of the heaven have their habitation, which sing among the branches. He watereth the hills from his chambers: the earth is satisfied with the fruit of thy works."

"O Lord, how manifold are thy works! in wisdom hast thou made them all: the earth is full of thy riches. So is this great and wide sea, wherein are things creeping innumerable, both small and great beasts. There go the ships: there is that leviathan, whom thou hast made to play therein."

The fruitfulness and beauty of the earth, as illustrating the wisdom and goodness of God, may serve as another lesson. Here may be exhibited the beauty and variety of the plants and flowers with which the earth is adorned; the manner of their growth and self-propagation, their utility to man and beast, their immense number and variety, their relations to each other as genera and species; trees and their varieties, their beauty and utility, their timber and their fruit; and, in connection with this lesson, Psalm civ. 14-34 may be committed to memory.

"He causeth the grass to grow for the cattle, and herb for the service of man: that he may bring forth food out of the earth; and wine that maketh glad the heart of man, and oil to make his face to shine, and bread which strengtheneth man's heart. The trees of the Lord are full of sap; the cedars of Lebanon, which he hath planted; where the birds make their nests: as for the stork, the fir trees are her house. The high hills are a refuge for the wild goats; and the rocks for the conies. He appointeth the moon for seasons: the sun knoweth his going down. Thou maketh darkness, and it is night: wherein all the beasts of the forest do creep forth. The young lions roar after their prey, and seek their meat from God. The sun ariseth, they gather themselves together, and lay them down in their dens. Man goeth forth unto his work and to his labor until the evening."

"These wait all upon thee; that thou mayest give them their meat in due season. That thou givest them they gather; thou openest thine hand, they are filled with good. Thou hidest thy face, they are troubled: thou takest away their breath, they die, and return to their dust. Thou sendest forth thy Spirit, they are created: and thou renewest the face of the earth. The glory of the Lord shall endure forever: the Lord shall rejoice in his works. He looketh on the earth, and it trembleth: he toucheth the hills, and they smoke. I will sing unto the Lord as long as I live: I will sing praise to my God while I have my being. My meditation of him shall be sweet: I will be glad in the Lord."

In like manner, the creation and nourishment, the habits and instincts of various animals may be contemplated, in connection with Proverbs vi. 6-8; Psalm civ. 17-22; Proverbs xxx. 24-31; Gen. i. 20-24; Psalm cxlv. 15-16.

"Go to the ant, thou sluggard! consider her ways, and be wise: Which having no guide, overseer, or ruler, provideth her meat in the summer, and gathereth her food in the harvest."

"There be four things which are little on the earth, but they are exceeding wise: the ants are a people not strong, yet they prepare their meat in the summer; the conies are but a feeble folk, yet make they their houses in the rocks; the locusts have no king, yet go they forth all of them by bands; the spider taketh hold with her hands, and is in kings' palaces. There be three things which go well, yea, four are comely in going: a lion, which is strongest among beasts, and turneth not away for any: a grayhound; a he-goat also; and a king, against whom there is no rising up."

"And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beasts of the earth after his kind: and it was so. And God made the beast of the earth after his kind, and cattle after their kind, and every thing that creepeth upon the earth after his kind: and God saw that it was good."

"The eyes of all wait upon thee; and thou givest them their meat in due season. Thou openest thine hand, and satisfiest the desire of every living thing. The Lord is righteous in all his ways, and holy in all his works."

The phenomena of light and color, the nature of the rainbow, &c., may make another interesting lesson, illustrating the unknown forms of beauty and glory which exist in the Divine Mind, and which He may yet develop in other and still more glorious worlds; in connection with Gen. i. 3, 5, 9, 13, 14, and other passages of like kind.

So the properties of the air, wind, and storm, Job xxviii. 25; xxxviii. 33, 34, 35. Psalm cxlviii. 8.

"Knowest thou the ordinance of heaven? canst thou set the dominion thereof in the earth? Canst thou lift up thy voice to the clouds, that abundance of waters may cover thee? Canst thou send lightnings, that they may go, and say unto thee, Here we are? Who hath put wisdom in the inward parts? or who hath given understanding to the heart? Who can number the clouds in wisdom? or who can stay the bottles of heaven?"

Then the heavens, the sun, moon, planets, fixed stars, and comets, the whole science of astronomy, so far as it can be introduced with advantage into common schools, can be contemplated in the same way. The enlightening, elevating, and purifying moral influence of such a scheme of instruction, carried through the

whole system of Nature, must be clearly obvious to every thinking mind; and its utility, considered merely with reference to worldly good, is no less manifest.

The second topic of religious instruction is more exclusively scriptural. The life of Christ, and the history of the apostles, as given in the New Testament, are chronologically arranged, and tables formed as before. (III. 3.) The discourses of Christ are examined and explained in their chronological arrangement, and in the same way the discourses and epistles of the apostles. The history of Christianity, in connection with the cotemporary civil history, is taught in a series of conversational lectures. To conclude the whole course of religious instruction, a summary of the Christian doctrine is given in the form of some approved catechism.

2. Knowledge of the world and of mankind, including civil society, constitutional law, agriculture, mechanic arts, manufactures, &c.

This is a continuation and completion, in a more systematic form, of the instruction commenced in III. 5. The course begins with the family, and the first object is to construct a habitation. The pupil tells what materials are necessary for this purpose, where they are to be found, how brought together and fitted into the several parts of the building. The house must now be furnished. The different articles of furniture and their uses are named in systematic order, the materials of which they are made, and the various trades employed in making them are enumerated. Then comes the garden, its tools and products, and whatever else is necessary for the subsistence and physical comfort of a family. Then the family duties and virtues; parental and filial obligation and affection; rights of property; duties of neighborhoods; the civil relations of society; the religious relations of society; the state, the father-land, &c.; finally, geography, history, and travels. Books of travels are compiled expressly for the use of schools, and are found to be of the highest interest and utility.

3. Language, and exercises in composition.

The object here is to give the pupils a perfect command of their native tongue, and ability to use it on all occasions with readiness and power. The first exercises are on simple questions, such as—"Why ought children to love and obey their parents?" or they are short descriptions of visible objects, such as a house, a room, a garden, &c. There are also exercises on the various forms of expressing the same idea, as, "The sun enlightens the earth." "The earth is enlightened by the sun." "The sun gives light to the earth." "The earth receives light from the sun." "The sun is the source of light to the earth." "The sun sends out its rays to enlighten the earth." "The earth is enlightened by rays sent out from the sun," &c. There are exercises also of the same sort on metaphors and other figures of speech. Familiar letters are then written, and short essays on themes such as may be furnished by texts from the Book of Proverbs, and other sentences of the kind; and thus gradual advancement is made to all the higher and graver modes of composition.

4. Application of arithmetic and the mathematics to the business of life, including surveying, civil engineering, &c.

The utility of this branch of instruction, and the mode of it, after what has already been said, are probably too obvious to need any further illustration.

5. Elements of drawing.

For this the pupils have already been prepared by the exercises in ornamental writing, in the previous part of the course. They have already acquired that accuracy of sight and steadiness of hand which are among the most essential requisites to drawing well. The first exercises are in drawing lines, and the most simple mathematical figures, such as the square, the cube, the triangle, the parallelogram; generally from wooden models, placed at some little distance on a shelf, before the class. From this they proceed to architectural figures, such as doors, windows, columns, façades. Then the figures of animals, such as a horse, a cow, an elephant; first from other pictures, and then from Nature. A plant, a rose, or some flower is placed upon a shelf, and the class make a picture of it. From this they proceed to landscape painting, historical painting, and the higher branches of the art, according to their time and capacity. All learn enough of drawing to use it in the common business of life, such as plotting a field, laying out a canal, or drawing the plan of a building; and many attain to a high degree of excellence.

6. Exercises in singing, and the science of music.

The instructions of the previous parts are extended as far as possible, and include singing and playing at sight, and the more abstruse and difficult branches of the science and art of music.

The following extracts from Hon. Horace Mann's Seventh Annual Report to the Board of Education in Massachusetts, will supply some deficiencies in the foregoing sketch, and, at the same time, present the impressions of another observer.

CLASSIFICATION.

The first element of superiority in a Prussian school, and one whose influence extends throughout the whole subsequent course of instruction, consists in the proper classification of the scholars. In all places where the numbers are sufficiently large to allow it, the children are divided according to ages and attainments; and a single teacher has the charge only of a single class, or of as small a number of classes as is practicable. I have before adverted to the construction of the school-houses, by which, as far as possible, a room is assigned to each class. Let us suppose a teacher to have the charge of but one class, and to have talent and resources sufficient properly to engage and occupy its attention, and we suppose a perfect school. But how greatly are the teacher's duties increased, and his difficulties multiplied, if he have four, five, or half a dozen classes, under his personal inspection. While attending to the recitation of one, his mind is constantly called off, to attend to the studies and the conduct of all the others. For this, very few teachers amongst us have the requisite capacity; and hence the idleness and the disorder that reign in so many of our schools, excepting in cases where the debasing motive of fear puts the children in iron. All these difficulties are at once avoided by a suitable classification; by such a classification as enables the teacher to address his instructions at the same time to all the children who are before him, and to accompany them to the play-ground, at recess or intermission, without leaving any behind who might be disposed to take advantage of his absence. All this will become more and more obvious as I proceed with a description of exercises. There is no obstacle whatever, save prescription, and that *vis inertia* of mind which continues in the beaten track because it has not vigor enough to turn aside from it, to the introduction, at once, of this mode of dividing and classifying scholars, in all our large towns.

METHOD OF TEACHING YOUNG CHILDREN ON THEIR FIRST ENTERING SCHOOL.

In regard to this as well as other modes of teaching, I shall endeavor to describe some particular lessons that I heard. The Prussian and Saxon schools are all conducted substantially upon the same plan, and taught in the same manner. Of course, there must be those differences to which different degrees of talent and experience give rise.

About twenty years ago, teachers in Prussia made the important discovery that children have five senses, together with various muscles and mental faculties, all which, almost by a necessity of their nature, must be kept in a state of activity, and which, if not usefully, are liable to be mischievously employed. Subsequent improvements in the art of teaching have consisted in supplying interesting and useful, instead of mischievous occupation, for these senses, muscles, and faculties. Experience has now proved that it is much easier to furnish profitable and delightful employment for all these powers, than it is to stand over them with a rod and stifle their workings, or to assume a thousand shapes of fear to guard the thousand avenues through which the salient spirits of the young play outward. Nay, it is much easier to keep the eye, and hand, and mind at work together, than it is to employ any one of them separately from the others. A child is bound to the teacher by so many more cords, the more of his natural capacities the teacher can interest and employ.

In the case I am now to describe, I entered a class-room of sixty children, of about six years of age. The children were just taking their seats, all smiles and expectation. They had been at school but a few weeks, but long enough to have contracted a love for it. The teacher took his station before them, and after

making a playful remark which excited a light titter around the room, and effectually arrested attention, he gave a signal for silence. After waiting a moment, during which every countenance was composed and every noise hushed, he made a prayer consisting of a single sentence, asking that as they had come together to learn, they might be good and diligent. He then spoke to them of the beautiful day, asked what they knew about the seasons, referred to the different kinds of fruit-trees then in bearing, and questioned them upon the uses of trees in constructing houses, furniture, &c. Frequently he threw in sportive remarks which enlivened the whole school, but without ever producing the slightest symptom of disorder. During the familiar conversation, which lasted about twenty minutes, there was nothing frivolous or trifling in the manner of the teacher; that manner was dignified though playful, and the little jets of laughter which he caused the children occasionally to throw out, were much more favorable to a receptive state of mind than jets of tears.

Here I must make a preliminary remark, in regard to the equipments of the scholars and the furniture of the school-room. Every child has a slate and pencil, and a little reading book of letters, words, and short sentences. Indeed, I never saw a Prussian or Saxon school, above an infant school, in which any child was unprovided with a slate and pencil. By the teacher's desk, and in front of the school, hung a blackboard. The teacher first drew a house upon the blackboard; and here the value of the art of drawing, a power universally possessed by Prussian teachers, became manifest. By the side of the drawing and under it, he wrote the word *house* in the German script hand, and printed it in the German letter. With a long pointing rod, the end being painted white to make it more visible, he ran over the form of the letters, the children, with their slates before them and their pencils in their hands, looking at the pointing rod and tracing the forms of the letters in the air. In all our good schools, children are first taught to imitate the forms of letters on the slate before they write them on paper; here they were first imitated on the air, then on slates, and subsequently, in older classes, on paper. The next process was to copy the word "house," both in script and in print, on their slates. Then followed the formation of the sounds of the letters of which the word was composed, and the spelling of the word. Here the *names* of the letters were not given as with us, but only their powers, or the sounds which those letters have in combination. The letter *h* was first selected and set up in the reading-frame, (the same before described as part of the apparatus of Prussian schools for young children,) instead of articulating our alphabetic *h*, (aitch,) merely gave a hard breathing; such a sound as the letter really has in the word "house." Then the diphthong, *au*, (the German word for "house" is spelled "haus,") was taken and sounded by itself, in the same way. Then the blocks containing *h*, and *au*, were brought together, and the two sounds were combined. Lastly, the letter *s* was first sounded by itself, then added to the others, and then the whole word was spoken. Sometimes the last letter in a word was first taken and sounded; after that the penultimate; and so on until the word was completed. The responses of the children were sometimes individual, and sometimes simultaneous, according to a signal given by the master.

In every such school, also, there are printed sheets or cards, containing the letters, diphthongs, and whole words. The children are taught to sound a diphthong, and then asked in what words that sound occurs. On some of these cards there are words enough to make several short sentences, and when the pupils are a little advanced, the teacher points to several isolated words in succession, which when taken together make a familiar sentence, and thus he gives them an agreeable surprise, and a pleasant initiation into reading.

After the word "house" was thus completely impressed upon the minds of the children, the teacher drew his pointing rod over the lines which formed the house; and the children imitated him, first in the air, while they were looking at his motions, then on their slates. In their drawings there was of course a great variety as to taste and accuracy; but each seemed pleased with his own, for their first attempts had never been so criticised as to produce discouragement. Several children were then called to the blackboard to draw a house with chalk. After this, the teacher entered into a conversation about houses. The first question was, what kind of a house was that on the blackboard? Then the names of other

kinds of houses were given. The materials of which houses are built were mentioned stone, brick, wood; the different kinds of wood; nails, and where they were made; lime, and whence it came, &c. &c. When the teacher touched upon points with which the children were supposed to be acquainted, he asked questions; when he passed to subjects beyond their sphere, he gave information, intermingling the whole with lively remarks and pleasant anecdotes.

And here one important particular should not be omitted. In this, as well as in all other schools, a complete answer was always required. For instance, if a teacher asks, "What are houses made of?" he does not accept the answer, "of wood" or "of stone;" but he requires a full, complete, (*vollständig*) answer; as, "a house may be made of wood." The answer must always contain an intelligible proposition without reference to the words of the question to complete it. And here also the greatest care is taken that the answer shall always be grammatically correct, have the right terminations of all articles, adjectives and nouns, and the right grammatical transpositions according to the idioms and structure of the language. This secures from the beginning, precision in the expression of ideas; and if, as many philosophers suppose, the intellect could never carry forward its processes of argument or investigation to any great extent, without using language as its instrument, then these children, in their primary lessons, are not only led to exercise the intellect, but the instrument is put into their hands by which its operations are facilitated.

When the hour had expired, I do not believe there was a child in the room who knew or thought that his play-time had come. No observing person can be at a loss to understand how such a teacher can arrest and retain the attention of his scholars. It must have happened to almost every one, at some time in his life, to be present as a member of a large assembly, when some speaker, in the midst of great uproar and confusion, has arisen to address it. If, in the very commencement of his exordium, he makes what is called a happy hit, which is answered by a response of laughter or applause from those who are near enough to hear it, the attention of the next circle will be aroused. If, then, the speaker makes another felicitous sally of wit or imagination, this circle too becomes the willing subject of his power; until, by a succession of flashes whether of genius or of wit, he soon brings the whole audience under his command, and sways it as the sun and moon sway the tide. This is the result of talent, of attainment, and of the successful study both of men and of things; and whoever has a sufficiency of these requisites will be able to command the attention of children, just as a powerful orator commands the attention of men. But the one no more than the other is the unbought gift of nature. They are the rewards of application and toil superadded to talent.

Now it is obvious that in the single exercise above described, there were the elements of reading, spelling, writing, grammar, and drawing, interspersed with anecdotes and not a little general information; and yet there was no excessive variety, nor were any incongruous subjects forcibly brought together. There was nothing to violate the rule of "one thing at a time."

Compare the above method with that of calling up a class of abecedarians; or, what is more common, a single child, and while the teacher holds a book or a card before him, and, with a pointer in his hand, says *a*, he echoes *a*; then *b*, and he echoes *b*; and so on until the vertical row of lifeless and ill-favored characters is completed, and then of remanding him to his seat, to sit still and look at vacancy. If the child is bright, the time which passes during this lesson is the only part of the day when he does not think. Not a single faculty of the mind is occupied except that of imitating sounds; and even the number of these imitations amounts only to twenty-six. A parrot or an idiot could do the same thing. And so of the organs and members of the body. They are condemned to inactivity; for the child who stands most like a post is most approved; nay, he is rebuked if he does not stand like a post. A head that does not turn to the right or left, an eye that lies moveless in its socket, hands hanging motionless at the side, and feet immovable as those of a statue, are the points of excellence, while the child is echoing the senseless table of *a, b, c*. As a general rule, six months are spent before the twenty-six letters are mastered, though the same child would learn the names of twenty-six playmates or twenty-six playthings in one or two days.

All children are pleased with the idea of a house, a hat, a top, a ball, a bird, an egg, a nest, a flower, &c.; and when their minds are led to see new relations or qualities in these objects, or when their former notions respecting them are brought out more vividly, or are more distinctly defined, their delight is even keener than that of an adult would be in obtaining a new fact in science, or in having the mist of some old doubt dispelled by a new discovery. Lessons on familiar objects, given by a competent teacher, never fail to command attention, and thus a habit of mind is induced of inestimable value in regard to all future study.

Again, the method I have described necessarily leads to conversation, and conversation with an intelligent teacher secures several important objects. It communicates information. It brightens ideas before only dimly apprehended. It addresses itself to the various faculties of the mind, so that no one of them ever tires or is cloyed. It teaches the child to use language, to frame sentences, to select words which convey his whole meaning, to avoid those which convey either more or less than he intends to express; in fine, it teaches him to seek for thoughts upon a subject, and then to find appropriate language in which to clothe them. A child trained in this way will never commit those absurd and ludicrous mistakes into which uneducated men of some sense not unfrequently fall, viz., that of mismatching their words and ideas; of hanging as it were, the garments of a giant upon the body of a pigmy, or of forcing a pigmy's dress upon the huge limbs of a giant. Appropriate diction should clothe just ideas, as a tasteful and substantial garb fits a graceful and vigorous form.

The above described exercise occupies the eye and the hand as well as the mind. The eye is employed in tracing visible differences between different forms, and the hand in copying whatever is presented, with as little difference as possible. And who ever saw a child that was not pleased with pictures, and an attempt to imitate them? Thus, the two grand objects so strenuously insisted upon by writers, in regard to the later periods of education and the maturer processes of thought, are attained, viz., the power of recognizing analogies and dissimilarities.

Having given an account of the reading lesson of a primary class, just after they had commenced going to school, I will follow it with a brief account of a lesson given to a more advanced class. The subject was a short piece of poetry describing a hunter's life in Missouri. It was first read, the reading being accompanied with appropriate criticisms as to pronunciation, tone, &c. It was then taken up verse by verse, and the pupils were required to give equivalent expressions in prose. The teacher then entered into an explanation of every part of it, in a sort of oral lecture, accompanied with occasional questions. This was done with the greatest minuteness. Where there was a geographical reference, he entered at large into geography; where a reference to a foreign custom, he compared it with their customs at home; and thus he explained every part, and illustrated the illustrations themselves, until, after an entire hour spent upon six four line verses, he left them to write out the sentiment and the story in prose, to be produced in school the next morning. All this was done without the slightest break or hesitation, and evidently proceeded from a mind full of the subject, and having a ready command of all its resources.

An account of one more lesson will close what I have to say on the subject of reading. The class consisted of young lads, belonging to a burgher school, which they were just about leaving. They had been reading a poem of Schiller; a sort of philosophical allegory; and when it was completed, the teacher called upon one of them to give a popular exposition of the meaning of the piece. The lad left his seat, stepped to the teacher's desk, and, standing in front of the school, occupied about fifteen or twenty minutes in an extemporaneous account of the poem, and what he supposed to be its meaning and moral.

ARITHMETIC AND MATHEMATICS.

Children are taught to cipher, or, if need be, to count, soon after entering school. I will attempt to describe a lesson which I saw given to a very young class. Blocks of one cube, two cubes, three cubes, &c., up to a block of ten cubes, lay upon the teacher's desk. The cubes on each block were distinctly

marked off, and differently colored, that is, if the first inch or cube was white, the next would be black. The teacher stood by his desk, and in front of the class. He set up a block of one cube, and the class simultaneously said *one*. A block of two cubes was then placed by the side of the first, and the class said *two*. This was done until the ten blocks stood by the side of each other in a row. They were then counted backward, the teacher placing his finger upon them, as a signal that their respective numbers were to be called. The next exercise was, "two comes after one, three comes after two," and so on to ten; and then backward, "nine comes before ten, eight comes before nine, and so of the rest. The teacher then asked, What is three composed of? A. Three is composed of one and two. Q. Of what else is three composed? A. Three is composed of three ones. Q. What is four composed of? A. Four is composed of four ones, of two and two, of three and one. Q. What is five composed of? A. Five is composed of five ones, of two and three, of two twos and one, of four and one. Q. What numbers compose six? seven? eight? nine? To the latter the pupil would answer, "Three threes make nine; two, three, and four make nine; two, two, and five make nine; three, four, and two make nine; three, five, and one make nine," &c., &c. The teacher then placed similar blocks side by side, while the children added their respective numbers together "two twos make four;" "three twos make six," &c. The blocks were then turned down horizontally to show that three blocks of two cubes each were equal to one of six cubes. Such questions were then asked as, how many are six less than eight? five less than seven? &c. Then, how many are seven and eight? The answer was given thus: eight are one more than seven, seven and seven make fourteen, and one added makes fifteen; therefore eight and seven make fifteen. Q. How many are six and eight? A. Eight are two more than six, six and six make twelve, and two added make fourteen. Or it might be thus: six are two less than eight, eight and eight are sixteen, two taken from sixteen leave fourteen, therefore eight and six are fourteen. They then counted up to a hundred on the blocks. Toward the close of the lesson, such questions as these were put, and readily answered: Of what is thirty-eight composed? A. Thirty-eight is composed of thirty and eight ones; of seven fives and three ones; or sometimes thus: of thirty-seven and one; of thirty-six and two ones; of thirty-five and three ones, &c. Q. Of what is ninety composed? A. Ninety is composed of nine tens, of fifty and forty, &c., &c.

Thus, with a frequent reference to the blocks, to keep up attention by presenting an object to the eye, the simple numbers were handled and transposed in a great variety of ways. In this lesson, it is obvious that counting, numeration, addition, subtraction, multiplication, and division were all included, yet there was no abstract rule, or unintelligible form of words given out to be committed to memory. Nay, these little children took the first steps in the mensuration of superficies and solids, by comparing the length and contents of one block with those of others.

When the pupils were a little further advanced, I usually heard lessons recited in this way: Suppose 4321 are to be multiplied by 25. The pupil says, five times one are five ones, and he sets down 5 in the unit's place; five times two tens, or twenty ones, are a hundred, and sets down a cipher in the ten's place; five times three hundred are one thousand and five hundred, and one hundred to be carried make one thousand six hundred, and sets down a 6 in the hundred's place; five times four thousand are twenty thousand, and one thousand to be carried make twenty-one thousand. The next figure in the multiplier is then taken, twenty times one are twenty, and a 2 is set down in the ten's place; twenty times two tens are four hundred, and a 4 is set down in the hundred's place; twenty times three hundred are six thousand, and a 6 is set down in the thousand's place; twenty times four thousand are eighty thousand, and an 8 is set down in the ten thousand's place. Then come the additions to get the product. Five ones are five, two tens are twenty, and these figures are respectively set down; four hundred and six hundred make a thousand, and a cipher is set down in the hundred's place; one thousand to be carried to six thousand makes seven thousand, and one thousand more makes eight thousand, and an 8 is set down in the thousand's place; eighty thousand and twenty thousand make one hundred thousand, and a cipher is set down in the ten thousand's place, and a 1 in the hundred

thousand's place. It is easy to see that where the multiplier and multiplicand are large, this process soon passes beyond mere child's play.

So in division. If 32756 are to be divided by 75, the pupil says, how many hundred times are seventy-five, or seventy-five ones, contained in thirty-two thousand and seven hundred, or in thirty-two thousand and seven hundred ones? four hundred times, and he sets down a 4 in the hundred's place in the quotient; then the divisor seventy-five is multiplied (as before) by the four hundred, and the product is set down under the first three figures of the dividend, and there are two thousand and seven hundred remaining. This remainder is set down in the next line, because seventy-five is not contained in two thousand seven hundred any number of hundred times. And so of the residue of the process.

When there is danger that an advanced class will forget the value of the denominations they are handling, they are required to express the value of each figure in full, throughout the whole process, in the manner above described.

I shall never forget the impression which a recitation by a higher class of girls produced upon my mind. It lasted an hour. Neither teacher nor pupil had book or slate. Questions and answers were extemporaneous. They consisted of problems in Vulgar Fractions, simple and compound; in the Rule of Three, Practice, Interest, Discount, &c., &c. A few of the first were simple, but they soon increase in complication and difficulty, and in the amount of the sums managed, until I could hardly credit the report of my own senses, so difficult were the questions, and so prompt and accurate the replies.

A great many of the exercises in arithmetic consisted in reducing the coins of one State to those of another. In Germany, there are almost as many different currencies as there are States; and the expression of the value of one coin in other denominations, is a very common exercise.

It struck me that the main difference between their mode of teaching arithmetic and ours, consists in their beginning earlier, continuing the practice in the elements much longer, requiring a more thorough analysis of all questions, and in not separating the processes, or rules, so much as we do from each other. The pupils proceed less by rule, more by an understanding of the subject. It often happens to our children that while engaged in one rule, they forget a preceding. Hence, many of our best teachers have frequent reviews. But there, as I stated above, the youngest classes of children were taught addition, subtraction, multiplication, and division, promiscuously, in *the same lesson*. And so it was in the later stages. The mind was constantly carried along, and the practice enlarged in more than one direction. It is a difference which results from teaching, in the one case, from a book; and in the other from the head. In the latter case the teacher sees what each pupil most needs, and, if he finds any one halting or failing on a particular class of questions, plies him with questions of that kind until his deficiencies are supplied.

In algebra, trigonometry, surveying, geometry, &c., I invariably saw the teacher standing before the blackboard, drawing the diagrams and explaining all the relations between their several parts, while the pupils, in their seats, having a pen and a small manuscript book, copied the figures, and took down brief heads of the solution; and at the next recitation they were required to go to the blackboard, draw the figures and solve the problems themselves. How different this mode of hearing a lesson from that of holding the text-book in the left hand, while the fore-finger of the right carefully follows the printed demonstration, under penalty, should the place be lost, of being obliged to recommence the solution.

GRAMMAR AND COMPOSITION.

Great attention is paid to Grammar, or, as it is usually called in the "Plan of Studies," the German language. But I heard very little of the ding-dong and recitative of gender, number and case, of government and agreement, which make up so great a portion of the grammatical exercises in our schools; and which the pupils are often required to repeat until they really lose all sense of the original meaning of the terms they use. Of what service is it for children to reiterate and reassert, fifty times in a single recitation, the gender and number of nouns, about which they never made a mistake even before a grammar book was put into their hands? If the object of grammar is to teach children to speak and

write their native language with propriety, then they should be practiced upon expressing their own ideas with elegance, distinctness, and force. For this purpose, their common every day phraseology is first to be attended to. As their speech becomes more copious, they should be led to recognize those slight shades of distinction which exist between words almost synonymous; to discriminate between the literal and the figurative; and to frame sentences in which the main idea shall be brought out conspicuously and prominently, while all subordinate ones, mere matters of circumstance or qualification, shall occupy humbler or more retired positions. The sentences of some public speakers are so arranged, that what is collateral or incidental stands out boldly in the foreground, while the principal thought is almost lost in the shade; an arrangement as preposterous as if, in the senate chamber, the forum or the parade-ground, the president, the judge or the commanding officer, were thrust into the rear, while a nameless throng of non-officials and incognitos should occupy the places of dignity and authority. Grammar should be taught in such a way as to lead out into rhetoric as it regards the form of the expression, and into logic as it regards the sequence and coherency of the thoughts. If this is so, then no person is competent to teach grammar who is not familiar at least with all the leading principles of rhetoric and logic.

The Prussian teachers, by their constant habit of conversing with the pupils; by requiring a complete answer to be given to every question; by never allowing a mistake in termination, or in the collocation of words or clauses, to pass uncorrected, nor the sentence as corrected to pass unrepeatd; by requiring the poetry of the reading lesson to be changed into oral or written prose, and the prose to be paraphrased, or expressed in different words; and by exacting a general account or summary of the reading lessons, are, as we may almost literally say, constantly teaching grammar; or, as they more comprehensively call it, the German language. It is easy to see that Composition is included under this head, the writing of regular "essays" or "themes" being only a later exercise.

WRITING AND DRAWING.

Such excellent handwriting as I saw in the Prussian schools, I never saw before. I can hardly express myself too strongly on this point. In Great Britain, France, or in our own country, I have never seen any schools worthy to be compared with theirs in this respect. I have before said that I found all children provided with a slate and pencil. They write or print letters, and begin with the elements of drawing, either immediately, or very soon after they enter school. This furnishes the greater part of the explanation of their excellent handwriting. A part of it, I think, should be referred to the peculiarity of the German script, which seems to me to be easier than our own. But after all due allowance is made for this advantage, a high degree of superiority over the schools of other countries remain to be accounted for. This superiority can not be attributed in any degree to a better manner of holding the pen, for I never saw so great a proportion of cases in any schools where the pen was so awkwardly held. This excellence must be referred in a great degree to the universal practice of learning to draw, contemporaneously with learning to write. I believe a child will learn both to draw and to write sooner and with more ease, than he will learn writing alone; and for this reason: the figures or objects contemplated and copied in learning to draw, are larger, more marked, more distinctive one from another, and more sharply defined with projection, angle or curve, than the letters copied in writing. In drawing, there is more variety, in writing more sameness. Now the objects contemplated in drawing, *from their nature*, attract attention more readily, impress the mind more deeply, and of course will be more accurately copied than those in writing. And when the eye has been trained to observe, to distinguish, and to imitate, in the first exercise, it applies its habits with great advantage to the second.

Another reason is, that the child is taught to draw things with which he is familiar, which have some significance and give him pleasing ideas. But a child who is made to fill page after page with rows of straight marks, that look so blank and cheerless though done ever so well, has and can have no pleasing associations with his work. The practice of beginning with making inexpressive marks, or with writing unintelligible words, bears some resemblance, in its lifelessness, to

that of learning the alphabet. Each exhales torpor and stupidity to deaden the vivacity of the worker.

Again, I have found it an almost universal opinion with teachers of the art of writing, that children should commence with large hand rather than with fine. The reason for this I suppose to be, that where the letters themselves are larger, their differences and peculiarities are proportionally large; hence they can be more easily discriminated, and discrimination must necessarily precede exact copying. So to speak, the child becomes acquainted with the physiognomy of the large letters more easily than with that of the small. Besides, the formation of the larger gives more freedom of motion to the hand. Now, in these respects, there is more difference between the objects used in drawing and the letters of a large hand, than between the latter and fine hand; and therefore the argument in favor of a large hand, applies with still more force in favor of drawing.

In the course of my tour, I passed from countries where almost every pupil in every school could draw with ease, and most of them with no inconsiderable degree of beauty and expression, to those where less and less attention was paid to the subject; and, at last, to schools where drawing was not practiced at all; and, after many trials, I came to the conclusion, that, with no other guide than a mere inspection of the copy books of the pupils, I could tell whether drawing were taught in the school or not; so uniformly superior was the handwriting in those schools where drawing was taught in connection with it. On seeing this, I was reminded of that saying of Pestalozzi, somewhat too strong, that "without drawing there can be no writing."

But suppose it were otherwise, and that learning to draw retarded the acquisition of good penmanship, how richly would the learner be compensated for the sacrifice. Drawing, of itself, is an expressive and beautiful language. A few strokes of the pen or pencil will often represent to the eye what no amount of words, however well chosen, can communicate. For the master architect, for the engraver, the engineer, the pattern designer, the draughtsman, moulder, machine builder, or head mechanic of any kind, all acknowledge that this art is essential and indispensable. But there is no department of business or condition in life, where the accomplishment would not be of utility. Every man should be able to plot a field, to sketch a road or a river, to draw the outlines of a simple machine, a piece of household furniture, or a farming utensil, and to delineate the internal arrangement or construction of a house.

But to be able to represent by lines and shadows what no words can depict, is only a minor part of the benefit of learning to draw. The study of this art develops the talent of observing, even more than that of delineating. Although a man may have but comparatively few occasions to picture forth what he has observed, yet the power of observation should be cultivated by every rational being. The skillful delineator is not only able to describe far better what he has seen, but he sees twice as many things in the world as he would otherwise do. To one whose eyes have never been accustomed to mark the form, color or peculiarities of objects, all external nature is enveloped in a haze, which no sunshine, however bright, will ever dissipate. The light which dispels this obscurity must come from within. Teaching a child to draw, then, is the development in him of a new talent the conferring upon him, as it were, of a new sense by means of which he is not only better enabled to attend to the common duties of life, and to be more serviceable to his fellow-men, but he is more likely to appreciate the beauties and magnificence of nature, which every where reflect the glories of the Creator into his soul. When accompanied by appropriate instruction of a moral and religious character, this accomplishment becomes a quickener to devotion.

With the inventive genius of our people, the art of drawing would be eminently useful. They would turn it to better account than any other people in the world. We now perform far the greater part of our labor by machinery. With the high wages prevalent amongst us, if such were not the case, our whole community would be impoverished. Whatever will advance the mechanic and manufacturing arts, therefore, is especially important here; and whatever is important for men to know, as men, should be learned by children in the schools.

But whatever may be said of the importance of this art, as it regards the community at large, its value to a school-teacher can hardly be estimated.

If the first exercises in reading were taught as they should be; if the squares of the multiplication table were first to be drawn on the blackboard, and then to be filled up by the pupils, as they should see on what reason the progressive increase of the numbers is founded; if geography were taught from the beginning, as it should be, by constant delineations upon the blackboard; then every teacher, even of the humblest school, ought to be acquainted with the art of linear drawing, and be able to form all the necessary figures and diagrams not only with correctness but with rapidity. But in teaching navigation, surveying, trigonometry, geometry, &c.; in describing the mechanical powers, in optics, in astronomy, in the various branches of natural philosophy, and especially in physiology, the teacher who has a command of this art, will teach incomparably better, and incomparably faster than if he were ignorant of it. I never saw a teacher in a German school make use of a ruler or any other mechanical aid, in drawing the most nice or complicated figures. I recollect no instance in which he was obliged to efface a part of a line because it was too long, or to extend it because it was too short. If squares or triangles were to be formed, they came out squares or triangles without any overlapping or deficiency. Here was not only much time gained, or saved, but the pupils had constantly before their eyes these examples of celerity and perfectness, as models for imitation. No one can doubt how much more correctly, as well as more rapidly, a child's mind will grow in view of such models of ease and accuracy, than if only slow, awkward, and clumsy movements are the patterns constantly held before it.

I saw handwriting taught in various ways. The most common mode for young children was that of writing on the blackboard for their imitation. In such cases, the copy was always beautifully written, and the lesson preceded by instructions and followed by corrections.

Another method which has had some currency in Germany, is this: If the mark to be copied is a simple straight line, thus, / /, the teacher says *one, one*, as words of command; and at each enunciation of the word, the pupils make a mark simultaneously. The teacher accelerates or retards his utterance according to the degree of facility the class has acquired. If the figure to be copied consists of an upward and downward stroke, thus, / \, the teacher says, *one, two; one, two*, (one for the upward, the other for the downward motion of the hand;) at first slowly, afterwards more rapidly. When the figure consists of three strokes, thus 1, he pronounces *one, two, three*, as before. Letters are formed in the same way.

A supposed advantage of this method consists in its retarding the motions of those who would otherwise write too fast, and hastening those who would write too slow. But for these purposes, the teacher must see that all keep time, otherwise the advantage is lost. And, on the whole, there is so much difference between the natural quickness of perception and of motion in different pupils, that there can be no such thing as a universal standard. Some scholars, whose thoughts and muscles are of electric speed, would be embarrassed by being obliged to write slowly; and others could not keep step, though the music played only common time. Neither in their physical nor in their spiritual natures, does the speed of children seem to have been graduated by any one clock.

In the schools I saw, orthography, punctuation, and the use of capitals, were early connected with the exercise of writing.

GEOGRAPHY.

The practice seemed to be uniform, however, of beginning with objects perfectly familiar to the child; the school-house with the grounds around it, the home with its yards or gardens, and the street leading from the one to the other. First of all, the children were initiated into the idea of space, without which we can know no more of geography than we can of history without ideas of time. Mr. Carl Ritter, of Berlin, probably the greatest geographer now living, expressed a decided opinion to me, that this was the true mode of beginning.

Children, too, commence this study very early; soon after entering school; but no notions are given them which they are not perfectly able to comprehend, reproduce, and express.

I found geography taught almost wholly from large maps suspended against the

walls, and by delineations on the blackboard. And here, the skill of teachers and pupils in drawing did admirable service. The teacher traced the outlines of a country on the suspended map, or drew one upon the blackboard, accompanying the exhibition by an oral lecture; and, at the next recitation, the pupils were expected to repeat what they had seen and heard. And, in regard to the natural divisions of the earth, or the political boundaries of countries, a pupil was not considered as having giving any proof that he had a correct image in his mind, until he could go to the blackboard, and reproduce it from the ends of his fingers. I witnessed no lesson unaccompanied by these tests.

I will describe, as exactly as I am able, a lesson which I heard given to a class a little advanced beyond the elements; remarking that, though I heard many lessons giving on the same plan, none of them were signalized by the rapidity and effect of the one I am about to describe.

The teacher stood by the blackboard, with the chalk in his hand. After casting his eye over the class to see that all were ready, he struck at the middle of the board. With a rapidity of hand which my eye could hardly follow, he made a series of those short, divergent lines, or shadings, employed by map-engravers to represent a chain of mountains. He had scarcely turned an angle, or shot off a spur, when the scholars began to cry out, Carpathian mountains, Hungary; Black Forest mountains, Wurtemberg; Giant's mountains, (Riesen-Gebirge,) Silesia; Metallic mountains, (Erz-Gebirge,) Pine mountains, (Fichtel-Gebirge,) Central mountains, (Mittel-Gebirge,) Bohemia, &c., &c.

In less than half a minute, the ridge of that grand central elevation which separates the waters that flow north-west into the German ocean, from those that flow north into the Baltic, and south-east into the Black Sea, was presented to view; executed almost as beautifully as an engraving. A dozen crinkling strokes, made in the twinkling of an eye, represented the head-waters of the great rivers which flow in different directions from that mountainous range; while the children, almost as eager and excited as though they had actually seen the torrents dashing down the mountain sides, cried out, Danube, Elbe, Vistula, Oder, &c. The next moment I heard a succession of small strokes or taps, so rapid as to be almost indistinguishable, and hardly had my eye time to discern a large number of dots made along the margins of the rivers, when the shout of Linz, Vienna, Prague, Dresden, Berlin, &c., struck my ear. At this point in the exercise, the spot which had been occupied on the blackboard was nearly a circle, of which the starting point, or place where the teacher first began, was the center; but now a few additional strokes around the circumference of the incipient continent, extended the mountain ranges outwards toward the plains; the children responding the names of the countries in which they respectively lay. With a few more flourishes the rivers flowed onwards toward their several terminations, and by another succession of dots, new cities sprang up along their banks. By this time the children had become as much excited as though they had been present at a world-making. They rose in their seats, they flung out both hands, their eyes kindled, and their voices became almost vociferous as they cried out the names of the different places, which, under the magic of the teacher's crayon, rose into view. Within ten minutes from the commencement of the lesson, there stood upon the blackboard a beautiful map of Germany, with its mountains, principal rivers and cities, the coast of the German ocean, of the Baltic and the Black seas; and all so accurately proportioned, that I think only slight errors would have been found had it been subjected to the test of a scale of miles. A part of this time was taken up in correcting a few mistakes of the pupils; for the teacher's mind seemed to be in his ear as well as in his hand, and notwithstanding the astonishing celerity of his movements, he detected erroneous answers and turned round to correct them. The rest of the recitation consisted in questions and answers respecting productions, climate, soil, animals, &c., &c.

Many of the cosmogonists suppose that after the creation of the world, and when its whole surface was as yet fluid, the solid continents rose gradually from beneath the sea: first the loftiest peak of the Andes, for instance, emerged from the deep, and as they reached a higher and a higher point of elevation, the rivers began to flow down their sides, until at last—the lofty mountains having attained their height, the mighty rivers their extent and volume, and the continent its

amplitude—cultivation began, and cities and towns were built. The lesson I have described was a beautiful illustration of that idea, with one advantage over the original scene itself, that the spectator had no need of waiting through all the geological epochs to see the work completed.

Compare the effect of such a lesson as this, both as to the amount of the knowledge communicated, and the vividness and of course the permanence of the ideas obtained, with a lesson where the scholars look out a few names of places on a lifeless atlas, but never send their imaginations abroad over the earth; and where the teacher sits listlessly down before them to interrogate them from a book, in which all the questions are printed at full length, to supersede on his part all necessity of knowledge.

EXERCISES IN THINKING. KNOWLEDGE OF NATURE. KNOWLEDGE OF THE WORLD.
KNOWLEDGE OF SOCIETY.

In the "Study-Plans" of all the schools in the north of Prussia, I found most, and in some of them all of the above subjects of lessons. To each was assigned its separate hour and place in the routine of exercises. For brevity's sake, however, and because the topics naturally run into each other, I shall attempt to describe them together.

These lessons consisted of familiar conversations between teacher and pupils, on subjects adapted to the age, capacities, and proficiency of the latter. With the youngest classes, things immediately around them; the school-room and the materials of which it had been built; its different parts, as foundation, floor, walls, ceiling, roof, windows, doors, fireplace; its furniture and apparatus; its books, slates, paper; the clothes of the pupils, and the materials from which they were made; their food and play-things; the duties of children to animals, to each other, to their parents, neighbors, to the old, to their Maker; these are specimens of a vast variety of subjects embraced under one or another of the above heads. As the children advanced in age and attainments, and had acquired full and definite notions of the visible and tangible existences around them, and also of time and space, so that they could understand descriptions of the unseen and the remote, the scope of these lessons was enlarged, so as to take in the different kingdoms of nature, the arts, trades and occupations of men, and the more complicated affairs of society.

When visiting the schools in Leipzig, I remarked to the superintendent, that most accomplished educationist, Dr. Vogel, that I did not see on the "Study-Plan" of his schools, the title, "Exercises in Thinking." His reply was, "No; for I consider it a *sin* in any teacher not to lead his pupil to think, in regard to all the subjects he teaches." He did not call it an omission or even a disqualification in a teacher, if he did not awaken thought in the minds of his pupils, but he peremptorily denounced it as a "*sin*." Alas! thought I, what expiation will be sufficient for many of us who have had charge of the young!

It is obvious from the account I have given of these primary lessons, that there is no restriction as to the choice of subjects, and no limits to the extent of information that may be engrafted upon them. What more natural than that a kind teacher should attempt to gain the attention and win the good will of a brisk, eager-minded boy just entering his school, by speaking to him about the domestic animals which he plays with, or tends at home; the dog, the cat, the sheep, the horse, the cow? Yet, without any interruption or overleaping of natural boundaries, this simple lesson may be expanded into a knowledge of all quadrupeds, their characteristics and habits of life, the uses of their flesh, skins, fur, bones, horns, or ivory, the parts of the world where they live, &c., &c. So if a teacher begins to converse with a boy about domestic fowls, there is no limit, save in his own knowledge, until he has exhausted the whole subject of ornithology; the varieties of birds, their plumage, their uses, their migratory habits, &c., &c. What more natural than that a benevolent teacher should ask a blushing little girl about the flowers in her vases, or garden at home? and yet, this having been done, the door is opened that leads to all botanical knowledge, to the flowers of all the seasons, and all the "zones," to the trees cultivated by the hand of man, or the primeval forests that darken the face of continents. Few children go to school who have not seen a fish; at least, a minnow in a pool. Begin with this, and

nature opposes no barrier until the wonders of the deep are exhausted. Let the school-house, as I have said, be the first lesson, and to a mind replenished with knowledge, not only all the different kinds of edifices—the dwelling-house, the church, the court-house, the palace, the temple—are at once associated; but all the different orders of architecture, Corinthian, Ionic, Doric, Egyptian, Gothic, &c., rise to the view. How many different materials have been brought together for the construction of the school-house; stone, wood, nails, glass, bricks, mortar, paints, materials used in glazing, &c., &c. Each one of these belongs to a different department of nature; and when an accomplished teacher has once set foot in any one of these provinces, he sees a thousand interesting objects around him, as it were soliciting his attention. Then each one of these materials has its artificer; and thus all the mechanical trades may be brought under consideration; the house builder's, the mason's, the plumber's, the glazier's, the locksmith's &c. A single article may be viewed under different aspects; as, in speaking of a lock, one may consider the nature and properties of iron; its cohesiveness, malleability, &c., its utility, or the variety of utensils into which it may be wrought; or the conversation may be turned to the particular object and uses of the lock, and upon these a lesson on the rights of property, the duty of honesty, the guilt of theft and robbery, &c., be engrafted. So in speaking of the beauties and riches and wonders of nature—of the revolution of the seasons, the glory of spring, the exuberance of autumn, the grandeur of the mountain, the magnificence of the firmament—the child's mind may be turned to a contemplation of the power and goodness of God. I found these religious aspects of nature to be most frequently adverted to; and was daily delighted with the reverent and loving manner in which the name of the Deity was always spoken, "*Der liebe Gott*," the dear God, was the universal form of expression; and the name of the Creator of heaven and earth was hardly ever spoken, without this epithet of endearment.

It is easy also to see that a description of the grounds about the school-house or the paternal mansion, and of the road leading from one of these places to the other, is the true starting point of all geographical knowledge; and, this once begun, there is no terminus, until all modern and ancient geography, and all travels and explorations by sea and land, are exhausted. So the boy's nest of marbles may be the nucleus of all mineralogy; his top, his kite, his little wind-wheel or water-wheel, the salient point of all mechanics and technology; and the stories he has heard about the last king or the aged king, the first chapter in universal history.

I know full well that the extent and variety of subjects said to be taught to young children in the Prussian schools, have been often sneered at.

In a late speech, made on a public occasion, by one of the distinguished politicians in our country, the idea of teaching the natural sciences in our common schools was made a theme for ridicule. Let it be understood in what manner an accomplished teacher may impart a great amount of useful knowledge on these subjects, and perhaps awaken minds which may hereafter adorn the age, and benefit mankind by their discoveries, and it will be easily seen to which party the ridicule most justly attaches. "What," says the objectors, "teach children botany, and the unintelligible and almost unspeakable names, Monandria, Dian-dria, Triandria, &c.; or zoology, with such technical terms as Mollusca, Crustacea, Vertebrata, Mammalia, &c., the thing is impossible!" The Prussian children are not thus taught. For years, their lessons are free from all the technicalities of science. The knowledge they already possess about common things is made the nucleus around which to collect more; and the language with which they are already familiar becomes the medium through which to communicate new ideas, and by which, whenever necessary, to explain new terms. There is no difficulty in explaining to a child, seven years of age, the distinctive marks by which nature intimates to us, at first sight, whether a plant is healthful or poisonous; or those by which, on inspecting the skeleton of an animal that lived thousands of years ago, we know whether it lived upon grass, or grain, or flesh. It is in this way that the pupil's mind is carried forward by an actual knowledge of things, until the time arrives for giving him classifications and nomenclatures. When a child knows a great many particular or individual things, he begins to perceive resemblances between some of them; and they then naturally assort themselves, as it were, in

his mind, and arrange themselves into different groups. Then, by the aid of a teacher, he perfects a scientific classification among them, bringing into each group all that belong to it. But soon the number of individuals in each group becomes so numerous, that he wants a cord to tie them together, or a vessel in which to hold them. Then, from the nomenclature of science, he receives a name which binds all the individuals of that group into one, ever afterwards. It is now that he perceives the truth and the beauty of classification and nomenclature. An infant that has more red and white beads than it can hold in its hands, and to prevent them from rolling about the floor and being lost, collects them together, putting the white in one cup and the red in another, and sits and smiles at its work, has gone through with precisely the same description of mental process that Cuvier and Linneus did, when they summoned the vast varieties of the animal and vegetable kingdoms into their spiritual presence, and commanded the countless hosts to arrange themselves into their respective genera, orders, and species.

Our notions respecting the expediency or propriety of introducing the higher branches, as they are called, into our common schools, are formed from a knowledge of our own school teachers, and of the habits that prevail in most of the schools themselves. With us, it too often happens that if a higher branch, geometry, natural philosophy, zoology, botany, is to be taught, both teacher and class must have text-books. At the beginning of these text-books, all the technical names and definitions belonging to the subject are set down. These, before the pupil has an practical idea of their meaning, must be committed to memory. The book is then studied chapter by chapter. At the bottom of each page, or at the ends of the sections, are questions printed at full length. At the recitations, the teacher holds on by these leading-strings. He introduces no collateral knowledge. He exhibits no relation between what is contained in the book, and other kindred subjects, or the actual business of men and the affairs of life. At length the day of examination comes. The pupils rehearse from memory with a suspicious fluency; or, being asked for some useful application of their knowledge, some practical connection between that knowledge and the concerns of life, they are silent, or give some ridiculous answer, which at once disparages science and gratifies the ill-humor of some ignorant satirist. Of course, the teaching of the higher branches falls into disrepute in the minds of all sensible men, as, under such circumstances, it ought to do. But the Prussian teacher has no book. He needs none. He teaches from a full mind. He cumbars and darkens the subject with no technical phraseology. He observes what proficiency the child has made, and then adapts his instructions, both in quality and amount, to the necessity of the case. He answers all questions. He solves all doubts. It is one of his objects, at every recitation, so to present ideas, that they shall start doubts and provoke questions. He connects the subject of each lesson with all kindred and collateral ones; and shows its relations to the every-day duties and business of life; and should the most ignorant man, or the most destitute vagrant in society, ask him "of what use such knowledge can be?" he will prove to him, in a word, that some of his own pleasures or means of subsistence are dependent upon it, or have been created or improved by it.

In the meantime, the children are delighted. Their preceptive powers are exercised. Their reflecting faculties are developed. Their moral sentiments are cultivated. All the attributes of the mind within, find answering qualities in the world without. Instead of any longer regarding the earth as a huge mass of dead matter, without variety and without life, its beautiful and boundless diversities of substance, its latent vitality and energies, gradually drawn forth, until, at length, they illuminate the whole soul, challenging its admiration for their utility, and its homage for the bounty of their Creator.

There are other points pertaining to the qualification of teachers, which would perhaps strike a visitor or spectator more strongly than the power of giving the kind of lessons I have described; but probably there is nothing which, at the distance of four thousand miles, would give to a reader or hearer so adequate an idea of intelligence and capacity, as a full understanding of the scope and character of this class of exercises. Suppose, on the one hand, a teacher to be introduced into a school, who is competent to address children on this great range and variety of subjects, and to address them in such a manner as to arouse their curi-

city, command their attention, and supply them not only with knowledge, but with an inextinguishable love for it; suppose such a teacher to be able to give one, and sometimes two such lessons a day, that is, from two hundred to four hundred lessons in a year, to the same class, and to carry his classes, in this way, through their eight years schooling. On the other hand, suppose a young man coming fresh from the plow, the workshop, or the anvil; or, what is no better, from Greek and Latin classics, and suppose his knowledge on the above enumerated subjects to be divided into four hundred, or even into two hundred parts, and that only one two-hundredth portion of that stock of knowledge should be administered to the children in a day. Let us suppose all this, and we shall have some more adequate idea of the different advantages of children, at the present time, in different parts of the world. In Prussia, the theory, and the practice under it, are, not that three years' study under the best masters qualifies a talented and devoted man to become a teacher, but that three years' of such *general* preparation may qualify one for that *particular* and *daily* preparation which is to be made before meeting a class in school. And a good Prussian teacher no more thinks of meeting his classes without this daily preparation, than a distinguished lawyer or clergyman amongst ourselves would think of managing a cause before court and jury, or preaching a sermon, without special reading and forethought.

It is easy to see, from the above account, how such a variety of subjects can be taught simultaneously in school, without any interference with each other; nay, that the "common bond," which, as Cicero says, binds all sciences together, should only increase their unity as it enlarges their number.

BIBLE HISTORY AND BIBLE KNOWLEDGE.

Nothing receives more attention in the Prussian schools than the Bible. It is taken up early and studied systematically. The great events recorded in the Scriptures of the Old and New Testament; the character and lives of those wonderful men, who, from age to age, were brought upon the stage of action, and through whose agency the future history and destiny of the race were to be so much modified; and especially, those sublime views of duty and of morality which are brought to light in the Gospel, these are topics of daily and earnest inculcation, in every school. To these, in some schools, is added the history of the Christian religion, in connection with contemporary civil history. So far as the Bible lessons are concerned, I can ratify the strong statements made by Professor Stowe, in regard to the absence of sectarian instruction, or endeavors at proselytism. The teacher being amply possessed of a knowledge of the whole chain of events, and of all biographical incidents; and bringing to the exercise a heart glowing with love to man, and with devotion to his duty as a former of the character of children, has no necessity or occasion to fall back upon the formulas of a creed. It is when a teacher has no knowledge of the wonderful works of God, and of the benevolence of the design in which they were created; when he has no power of explaining and applying the beautiful incidents in the lives of prophets and apostles, and especially, the perfect example which is given to men in the life of Jesus Christ; it is then, that, in attempting to give religious instruction, he is, as it were, constrained to recur again and again to the few words or sentences of his form of faith, whatever that faith may be; and, therefore, when giving the second lesson, it will be little more than a repetition of the first, and the two-hundredth lesson, at the end of the year, will differ from that at the beginning only in accumulated wearisomeness and monotony.

There are one or two facts, however, which Professor Stowe has omitted to mention, and without a knowledge of which, one would form very erroneous ideas respecting the character of some of the religious instruction in the Prussian schools. In all the Protestant schools, Luther's Catechism is regularly taught; and in all the Roman Catholic schools, the Catechism of that communion. When the schools are mixed, they have combined literary with separate religious instruction; and here all the doctrines of the respective denominations are taught early and most assiduously. I well remember hearing a Roman Catholic priest inculcating upon a class of very young children the doctrine of transubstantiation. He illustrated it with the miracle of the water changed to wine, at the marriage feast in Cana; and said that he who could turn water into wine, could turn his own

blood into the same element, and also his body into bread to be eaten with it. Contrary, then, to the principles of our own law, sectarianism is taught in all Prussian schools; but it is nevertheless true, as Professor Stowe says, that the Bible can be taught, and is taught, without it.

MUSIC.

All Prussian teachers are masters not only of vocal, but of instrumental music. One is as certain to see a violin as a blackboard, in every school-room. Generally speaking, the teachers whom I saw, played upon the organ also, and some of them upon the piano and other instruments. Music was not only taught in school as an accomplishment, but used as a recreation. It is a moral means of great efficacy. Its practice promotes health; it disarms anger, softens rough and turbulent natures, socializes, and brings the whole mind, as it were, into a state of fusion, from which condition the teacher can mould it into what forms he will, as it cools and hardens.

All these subjects I have enumerated, were taught in all the schools I visited, whether in city or country, for the rich or for the poor. In the lowest school in the smallest and obscurest village, or for the poorest class in over-crowded cities; in the schools connected with pauper establishments, with houses of correction or with prisons, in all these, there was a teacher of *mature age*, of simple unaffected and decorous manners, benevolent in his expression, kind and genial in his intercourse with the young, and of such attainments and resources as qualified him not only to lay down the abstract principles of the above range of studies, but, by familiar illustration and apposite example, to commend them to the attention of the children.

Although the foregoing account of primary instruction in Germany, was drawn from observations mainly in the schools of Prussia and Saxony, it is, in its main features, applicable to primary schools in the other German States. On this point, Mr. Kay bears the following emphatic testimony in his valuable contribution to our knowledge of the social and educational condition of Europe*—a work, from which we shall have occasion to quote largely in giving an account of the school systems of Switzerland and the several German States.

In Bavaria, Wirtemberg, the Duchy of Baden, and Nassau, as much, and in Wirtemberg and Baden perhaps even more, has been done to promote the intelligence, morality, and civilization of the lower orders of society, than in Prussia. In each of these countries, every village has a good school-house, and at least one learned and practically efficient teacher, who has been educated for several years at a college; every town has several well-organized schools, sufficiently large to receive all the children of the town, who are between the ages of six and fourteen; each of these schools contains from four to ten class-rooms, and each class-room is under the direction of a highly educated teacher.

In each of these countries, every parent is *obliged* to educate his children, either at home or at some school, the choice of means being left to himself. In none of these countries are children left to grow up in vicious ignorance or with debasing habits.

In none of these countries, is there any class of children analogous to that, which swarms in the back streets, alleys, and gutters of our great cities and towns, and from which our paupers, our disaffected, and our criminals grow up, and from which our "ragged schools" are filled. All the children are intelligent, polite, clean, and neatly dressed, and grow up from their sixth to their fourteenth year under the teaching and influence of educated men.

* *The Social Condition and Education of the People in England and Europe*; showing the results of the primary schools and of the division of landed property in foreign countries, by Joseph Kay, Esq., M. A., of Trinity College, Cambridge; Barrister-at-law; and late Travelling Bachelor of the University of Cambridge. London: Longman, Brown, Green, and Longmans. 1850.

In each of these countries a sufficient number of normal colleges has been founded, to enable it to educate a sufficient supply of teachers for the parishes and towns.

In each of these countries, all the schools of every sect and party, private as well as public, are open to public inspection, and are visited several times every year by learned men, whose business it is to examine both teachers and scholars, and to give the government, the chambers, and the country, a full and detailed account of the state, condition, character, and progress of every school, so that parents may know where to send their children with safety; that good teachers may be encouraged, rewarded, and promoted; and that unworthy teachers may not be suffered to continue long in their situations.

In each of these countries, the laws prohibit any person being a teacher of any school, until he has proved his efficiency to the committee of professors, appointed by the state to examine candidates, and until he has laid before such committee testimonials of character from his religious minister, his neighbors, and the professors of the college at which he was educated.

I can give a traveler, who is desirous of comprehending at one short view the workings of the German and Swiss systems of popular education, no better advice than to direct him to notice the state of the streets in any German or Swiss town, which he happens to visit; no matter where it be, whether on the plains of Prussia or Bavaria, on the banks of the Rhine, in the small towns of the Black Forest, or in the mountainous cantons of Alpine Switzerland, no matter where, let him only walk through the streets of such a town in the morning or the afternoon, and count the number of children to be found there above the age of four or five, or let him stand in the same streets, when the children are going to or returning from the schools, and let him examine their cleanly appearance, the good quality, the excellent condition, and the cleanliness of their clothing, the condition of the lesson books they are carrying, the happiness and cheerfulness, and, at the same time, the politeness and ease of their manners; he will think he sees the children of the rich; but let him follow them home, and he will find that many of them are the offspring of the poorest artisans and laborers of the town. If that one spectacle does not convince him of the magnitude of the educational efforts of Germany, and of the happy results which they are producing, let him go no further, for nothing he can further see will teach him. Let him then come home, and rejoice in the condition of our poor; but, should he start at this extraordinary spectacle, as I have seen English travelers do, to whom I have pointed out this sign of advanced and advancing civilization, let him reflect, that this has been effected, spite of all the obstacles which impede ourselves. Bigotry and ignorance have cried their loudest; Romanists have refused co-operation with Protestants, Protestants with Romanists, and yet they have co-operated. There has been the same strong jealousy of all government interference, the same undefined and ill-digested love of liberty, and there has been the same selfish fear of retarding the development of physical resources. In Bavaria, the war has been waged between Romanists and Protestants; in Argovie, opposition has been raised by the manufacturers; in Lucerne, by the religious parties, and by the political opponents of the government; and in Baden, the difficulties have been aggravated by the numbers of Jews, whom both Romanists and Protestants hated to receive into alliance, even more than they disliked to co-operate among themselves. But in all these countries the great principle has finally triumphed; and all parties have yielded some little of their claims, in the full conviction, that a day is dawning upon Europe, fraught with the most overwhelming evils for that country which has not prepared for its approach.

Whether the methods by which any of these different countries are carrying out their great design, are in any way applicable to this country or not, I shall not stop to consider, my desire being merely to show how different countries, with different degrees of political freedom, with different political constitutions, whose people profess different religious tenets, where Protestants of different sects, Roman Catholics, and Jews, are mingled up in every kind of proportion, have all managed to overcome difficulties precisely similar to those which stand in our way, and have all agreed to labor together to educate their poor. For it is a great fact, however much we may be inclined to doubt it, that throughout Prussia,

Saxony, Bavaria, Bohemia, Wirtemberg, Baden, Hesse Darmstadt, Hesse Cassel, Gotha, Nassau, Hanover, Denmark, Switzerland, Norway, and the Austrian Empire, ALL the children are actually, at this present time, attending school, and are receiving a careful, religious, moral, and intellectual education, from highly educated and efficient teachers. Over the vast tract of country, which I have mentioned, as well as in Holland and the greater part of France, *all* the children above six years of age are daily acquiring useful knowledge and good habits under the influence of moral, religious, and learned teachers. ALL the youth of the greater part of these countries, below the age of twenty-one years, can read, write, and cipher, and know the Bible history, and the history of their own country. No children are left idle and dirty in the streets of the towns; there is no class of children to be compared, in any respect, to the children who frequent our "ragged schools;" all the children, even of the poorest parents, are, in a great part of these countries, in dress, appearance, cleanliness, and manners, as polished and civilized as the children of our middle classes; the children of the poor in Germany are so civilized that the rich often send their children to the schools intended for the poor; and, lastly, in a great part of Germany and Switzerland, the children of the poor are receiving a *better* education than that given in England to the children of the greater part of our middle classes! These facts deserve to be well considered.

And let it be remembered that these great results have been attained, notwithstanding obstacles *at least* as great as those which make it so difficult for us to act. Are they religious differences which hinder us? Look at Austria, Bavaria, and the Prussian Rhine provinces, and the Swiss cantons of Lucerne and Soleure. Will any one say, that the religious difficulties in those countries are less than those which exist in our own? Is the sectarianism of the Jesuits of Lucerne, or of the priests of Bavaria, of a more yielding character toward the Protestant "heretics," than that of one Protestant party in England toward another? And yet, in each of these countries, the difficulties arising from religious differences have been overcome, and *all* their children are brought under the influence of a *religious* education, without any religious party having been offended. But are they political causes, which prevent us proceeding in this great work, in which nearly all Europe has so long preceded us, notwithstanding that we need it more than all the European nations put together? Are they political causes, I ask? I answer by again referring my readers to the countries I have enumerated. Under the democratic governments of the Swiss cantons, where it is the people who rule and legislate; under the constitutional governments of Saxony, Wirtemberg, and Baden, which were framed more or less upon the English model, and where the people have long had a direct influence upon the government; under the constitutional governments of France and Holland, and under all the different grades of absolute rule which existed but a few months since in Prussia, the German dukedoms, and the Austrian states, the difficulties of the question have long been overcome, and with such entire satisfaction to all parties, that among the present representatives of the people, no member has ever been heard to express a desire for the change of the laws which relate to primary education.

But once again; perhaps there are some who say, but there is no country which is troubled, as we are, by the union of both religious and political difficulties. I again refer my readers to the cases of Holland and Switzerland. They will find in these countries the same strong love of independence of action, which we boast so proudly and so justly. They will find also, not only strong religious feuds existing among the Protestants themselves, and pushed to the most shameful extremities, as in the case of the canton of Vaud, from which one religious party has lately been driven as exiles, but they will find the still more formidable differences of the Protestants and Catholics arrayed against each other, and seemingly preventing all union on any subject whatsoever; and yet, in all these various countries, differing as they do in the state of their religious parties, and of their political regulations, in *all* of them, I say, have *all* parties consented to join on this one great and important question, **THE EDUCATION OF THE PEOPLE.**

But there are some who say, that if our means of direct education are worse, yet that our means of indirect education are better than those of other countries, and that if our people have not schools and good teachers, they have long had a

free press, the right of assembling together for political discussion, plenty of cheap and very liberal journals, good reports of all the debates of our Houses of Legislature, and a literature free in its spirit, suggestive in its writings, and any thing but one-sided in its views of political and social questions, and that all this serves to stimulate the intellectual energies of the people. As far as regards the middle classes, this is all very true; but, as regards the poor, it is ridiculously false. Most of our poor are either wholly without education, or else possess so little as to be entirely out of the sphere of such influences, as those I have enumerated. What good can one of our boorish peasants gain from cheap literature, free parliamentary debates, free discussion, and liberal journals? What advantage is it to a starving man that there is bread in the baker's shop, if he has not wherewith to buy? What good is cheap literature and free discussion to a poor peasant who can neither read nor think? He starves in the midst of plenty, and starves too with a curse upon his lips.

It is utterly false to argue that the peasants would provide themselves with schools and education, if education would improve their condition in society. We can never hope to see the peasants supply themselves with schools. They never have done so in any country, they never will do so in our own. Such a step implies in them a great prior development of the intellectual and moral faculties; a development which can only be obtained by means of education. The peasants are neither wise enough, nor rich enough, to erect or support schools for themselves, and should government refuse either to do it for them, or to oblige all classes to assist the poor to accomplish this great work, we may rest assured that another century will see no further advances than we have made at present; our schools are for the most part totally unfitted for their purpose, and our teachers the most ignorant, ill-paid, and least respected set of men in the community. Other countries have long since recognized these truths, and acted upon them.

Whilst in England we have been devoting most of our energies to the increase of our national wealth, the Germans and Swiss have been engaged in the noble undertaking of attempting to raise the character and social position of their poorer classes. To effect this, they have not vainly imagined that schools alone were sufficient, but to the accomplishment of this great end, every social institution and every social regulation has been rendered subservient. They began, it is true, by raising schools, and educating teachers; but they have continued this great work by reforming their prisons and criminal codes; by facilitating the transfer and division of their lands; by simplifying their legal processes; by reforming their ecclesiastical establishments; by entirely changing the mediæval and illiberal constitutions of their universities and public schools; by improving the facilities of internal communication; and, lastly, by opening the highest and most honorable offices of the state to all worthy aspirants, no matter of how low an origin.

Nor have their labors in the cause of social reform diminished, as there was seemingly less immediate need for them. On the contrary, to a traveler in these countries, who has not acquainted himself with all that has been going on there for the last thirty years, they would seem to be only now commencing, so vigorous and universal are the efforts which are at this moment being made.

It is doubtless true, that the social polity of a country should be so ordered, that the whole life of any of its members should be a progressive and continued religious, moral, and intellectual education; but it is no less certain that this great work, if it is ever to have a commencement, must begin at home, and be continued, in the case of the peasant, in the village school, under the superintendence of the religious minister and village teacher, or it can never be accomplished at all. True it is, that at first the evil influence of the home will be stronger than the good one of the teacher and the school. But still, if he understand the conduct of his important work, he will know how to awaken those principles which, it may be, lie dormant, but which nevertheless exist in every child's mind, and which, if once aroused, would be certain in some degree to mitigate the evil influences of home. Thus might we hope, that the cottage fire-sides of the next generation would prove less injurious than those of the present to the children, who will cluster around them, and that the school would have an auxiliary, and not an antagonist, in the powerful, though now, alas! too often misdirected influences of home. It is only when we have attained this happy result, that we can hope to realize the full bene-

fits which education is capable of conferring, and which, in other lands, it is at this day conferring upon the people.

So long as the early *domestic* training is in direct opposition to the education of the schools, so long must the improvement in education be very slow; but, however slow, it is the only sure means we have of counteracting the effects of a vicious domestic training, and of cleansing the very fount of immorality. The laborer is occupied from twilight on to twilight, and the religious ministers have but few opportunities of bringing higher influences to bear upon him. Those, too, who most need improvement, are generally the most unwilling to receive it; and those whose homes act most injuriously on the younger inmates, are precisely those, who oppose most strenuously the entry of the religious minister, and who are most rarely brought under any ennobling influence whatever. Thus it often happens, that the only way by which we can introduce reform into a home, is through the children; for, most happily, there is among the poor such a great idea of the benefits to be derived from education, that it very rarely happens that the parent can not be persuaded to send his child to school, *when he is enabled to do so.*

It is delightful to see how thoroughly this truth has been recognized in Western Europe. From the shores of the Baltic and the North Sea to the foot of the great Alpine range, and from the Rhine to the Danube, *all* the children of both rich and poor are receiving *daily* instruction, under the surveillance of their religious ministers, from long and most carefully educated teachers. Throughout the plains of Prussia, Bohemia, and Bavaria, among the hills and woods of Saxony and central Germany, in the forests and rich undulating lands of Württemberg and Baden, in the deep and secluded Alpine valleys of Switzerland and the Tyrol, in most of the provinces of the Austrian empire, throughout Holland, Denmark, and almost the whole of France, and even in the plains of Italian Lombardy, there is scarcely a single parish, which does not possess its school-house and its one or two teachers. The school buildings are often built in really an extravagant manner; and in Switzerland and South Germany, the village school is generally the finest erection of the neighborhood. In the towns the expenditure on these monuments of a nation's progress is still more remarkable. Here the municipal authorities generally prefer to unite several schools for the sake of forming one complete one. This is generally erected on the following plan: A large house is built of three or four stories in height, with commodious play yards behind. The one or two upper stories are used as apartments for the teachers; the lower rooms are set apart for the different classes. A town school has generally from *eight to ten*, and sometimes twelve or fourteen, of these class-rooms, each of which is capable of containing from 80 to 100 children. An educated teacher is appointed to manage each class, so that there is generally a staff of at least *eight* teachers connected with each town school of Germany, and I have seen schools with as many as twelve and fourteen teachers. The rooms are filled with desks, maps, and all the apparatus which the teachers can require for the purposes of instruction. I generally noticed, on entering a small German or Swiss town, that next to the church, the finest building was the one set apart for the education of the children.

It is impossible to estimate the enormous outlay which Germany has devoted to the erection and improvement of school-houses alone, during the last fifteen years. In the towns, hardly any of the old and inefficient buildings now remain, except where they have been improved and enlarged. In Munich, I directed my conductor to lead me to the worst school buildings in the city, and I found all the class-rooms measuring fourteen feet high by about twenty-five square, and ten of such class-rooms in each school-house, each of which rooms was under the constant direction of an educated teacher. In whatever town I happened to be staying, I always sought out the worst, in preference to the best schools. In Berlin, the worst I could find contained four class-rooms, each eight feet in height, and about fifteen feet square; and in the Grand Duchy of Baden I found that the Chambers had passed a law prohibiting any school-house being built, the rooms of which were not fourteen feet high.

Throughout Germany no expense seems to have been spared to improve the materials of popular instruction.

This could never have been effected had not the expenses of such an immense

undertaking been equally distributed over all the parishes of the different states. The burden being thus divided amongst all, is not felt by any; but had the government started in the vain hope of being able to bear even a third of the expense, popular education would have been no further advanced in Germany than in England. But wiser, or more interested in the real success of the undertaking than ourselves, the governments of the different states have obliged each province to provide for the expenses necessary for its own primary education.

The systems, so far from having been systems of excessive centralization, leaving no freedom of action to the parishes, have been always and still are *essentially* parochial systems, merely under the surveillance, and subject to the check of the central authority. It is the parishes and towns, which tax themselves for educational purposes; it is the parishioners and citizens, who elect their own teachers; it is the parishioners and citizens, who pay their own teachers, and provide all the materials for the education of their own poor; it is the parishioners and citizens, who determine whether they will have separate schools for their different religious sects, or common schools for them all; it is the parishioners, who choose the sites of their school-houses, and the outlay they will make on their erection; and although they have not the power of dismissing a teacher after they have once elected him, without first showing to government a sufficient ground for such a step, yet they are afforded every facility of forwarding any complaints they may have to make of any teacher they have elected, to the educational authorities appointed to judge such matters, and to protect the teachers from the effects of mere personal animosities or ignorance.

Germany will one day be lauded by all Europe, as the inventor of a system securing, in the best possible manner, guidance by the greatest intelligence of the country, the cheapest manner of working, the fostering of local activity and of local sympathies, and the cordial assistance of the religious ministers.

Disputes about separate or mixed schools are unheard of in Prussia, because every parish is left to please itself which kind it will adopt. One of the leading Roman Catholic Counsellors of the Educational Bureau in Berlin assured me, that they never experienced any difficulty on this point. "We always," he said, "encourage separate schools when possible, as we think religious instruction can be promoted better in separate than in mixed schools; but, of course, we all think it better to have mixed schools, than to have no schools at all; and when we can not have separate schools we are rejoiced to see the religious sects uniting in the support of a mixed one. When mixed schools are decided on by the parochial committees, the teacher is elected by the most numerous of the two sects; or, if two teachers are required, one is elected by one sect, and the other by the other; and in this case each conducts the religious education of the children of his own sect. But when only one teacher is elected, the children of those parents, who differ from him in religious belief, are permitted to be taken from the school during the religious lessons, on condition that their parents make arrangements for their religious instruction by their own ministers."

I went to Prussia with the firm expectation, that I should hear nothing but complaints from the peasants, and that I should find the school nothing but a worthy offshoot of an absolute government. To test whether this really was the case or not, as well as to see something of the actual working of the system in the country districts, I traveled alone through different parts of the Rhine provinces for four weeks before proceeding to the capital. During the whole of my solitary rambles, I put myself as much as possible into communication with the peasants and with the teachers, for the purpose of testing the actual state of feeling on this question. Judge, then, of my surprise, when I assure my readers that, although I conversed with many of the very poorest of the people, and with both Romanists and Protestants, and although I always *endeavored* to elicit expressions of discontent, I never once heard, in any part of Prussia, one word spoken by any of the peasants against the educational regulations. But on the contrary, I every where received daily and hourly proofs, of the most unequivocal character, of the satisfaction and real pride with which a Prussian, however poor he may be, looks upon the schools of his locality.

Often and often have I been answered by the poor laborers, when asking them whether they did not dislike being *obliged* to educate their children, "Why should

I? The schools are excellent; the teachers are very learned and good men; and then think how much good our children are gaining; they behave better at home, they make our families all the happier, and they are much better able in after-life to earn their own livelihood. No, no; we do not dislike the schools. We know too well how much good our children are gaining from them." I have heard this said over and over again in different parts of Prussia, Saxony, Bavaria, Wirtemberg, and Baden; and, indeed, I may add, that throughout Germany, I never heard one single word of discontent uttered against these truly liberal and Christian establishments.

Every one of the richer classes, with whom I conversed, corroborated the truth of all that the peasants had told me. I particularly remember a very intelligent teacher at Elberfeld saying to me, "I am quite convinced that, if we had a political revolution to-morrow, none of the peasants would think of wishing to have any great alteration made in the laws which relate to the schools." Recent facts have proved the truth of the assertion.*

Several travelers have fallen into the strangest errors in their investigations on this subject, from having confined their attention to the schools of the capitals, or of one or two other large towns. Very few have seen the working of the system in the villages and remote provinces. But it is there only that a fair idea can be formed of the effects it is producing, and of the manner in which it is regarded by the people themselves.

* A remarkable proof of the truth of these remarks is, that since the commencement of the German revolutions of 1848, the only change in the educational regulations, which has been demanded by the people, is, that they should be allowed to send their children to the parochial schools free of all expense, and that the present small weekly pence required from the parents for the education of each child should be paid out of the regular parochial school rates. This has been conceded, and the peasants themselves will now as rigorously enforce the compulsory educational regulations, as the Swiss peasants enforce laws at least as stringent.

IV. PUBLIC INSTRUCTION IN PRUSSIA.

HISTORY AND STATISTICS.

THE system of Public Instruction in Prussia embraces three degrees, provided for in three classes of institutions. 1. Primary or Elementary Instruction, conveyed in schools corresponding to our common schools. 2. Secondary Instruction, provided for in Gymnasias, Real Schools and Trade Schools. 3. Superior instruction, communicated in the Universities. We shall confine our attention to Primary Instruction, and shall present a general idea of the system from various authorities.*

As early as the reign of the Elector Joachim the Second, before the kingdom of Prussia existed, except as the Mark of Brandenburg, (1540,) visitors were appointed to inspect the town schools of the Electorate, with express directions to report in relation to the measures deemed necessary for their improvement. In 1545, the same elector appointed a permanent council or board, on church and school matters. In a decree of some length, by the elector John George, (1573,) special sections are devoted to the schools, to teachers and their assistants, and to pupils. It is remarkable as containing a provision for committees of superintendence, consisting of the parish clergyman, the magistrates and two notables, exactly similar in constitution to the present school committees.

In 1777, a decree of Frederick William the First, king of Prussia, enjoins upon parents to send their children to school, provides for the payment of teachers, for the education of poor children, and for catechetical instruction by the parochial clergymen. In 1735, the first regular seminary for teachers in Prussia was established at Stettin, in Pomerania. To induce a better attendance at school, a decree of 1736 requires that the parent of every child between five and twelve years of age, shall pay a certain fee, whether his child goes to school or not; this rule being, as it were, preliminary to the present one of forced attendance. The same decree refers to school-houses erected by associated parishes, showing, that such associations existed previously to the decree for providing public schools; similar associations may even now exist, but they are not numerous, forming exceptions to the general rule requiring each parish to have its public school. The decree provides further for the amount of fees to be paid to the teacher by the pupils, the church, or the state, and for aid to peasants who have more than two children above five years of age, by the payment of the fees of all over this number from a school fund. A rescript of 1738, constitutes the clergy the inspectors of schools.

Bache's "*Report on Education in Europe.*" Cousin's "*Report on Primary Instruction in some of the States of Germany, and particularly in Prussia.*" Prof. Stephens's "*Letter to the Superintendent of Common Schools in Pennsylvania in 1843.*" Recent School Documents from Germany, by Harnisch, Callatah, Jacobi and others.

An attempt to provide more precisely, by law, for the regulation of the schools in Berlin, was made by a decree of 1736. This decree requires that teachers shall be regularly examined by the inspectors of schools before being allowed to teach, and prescribes their acquirements in detail. It directs the opening and closing of the schools with prayers; fixes the hours of daily attendance at from eight to eleven, or seven to ten in the morning, and one to three in the afternoon; prescribes instruction in spelling, reading, writing, arithmetic, and singing, and regulates the emoluments and perquisites of the master.

A new impulse was given to public instruction under the reign of Frederick the Great. The regulations drawn up by Hecker, and approved by the king, (1763,) are very precise, and though they have been in part superseded by later decrees, many of their provisions are still in force. They provide for the selection of school books by the consistory; that children shall be sent to school at five years of age, and be kept there until thirteen or fourteen, or until they have made satisfactory attainments in reading and writing, in the knowledge of Christian doctrine, and of such matters as are to be found in their text-books; fix the school-hours, requiring six hours a day for instruction in winter, and three in summer, and one hour of catechetical instruction, besides the Sunday teaching; require that all unmarried persons of the parish shall attend the hour of instruction in the catechism, and besides, receive lessons in reading and writing from the Bible. The regulations provide anew for the schoolmasters' fees, and for the instruction of poor children; require that the schoolmaster shall be furnished from the church-register with a list of all the children of the age to attend school, and that he shall prepare a list of those who are actually in attendance, and submit both to the clergyman, in his periodical visits; direct anew the examination of candidates for the situation of schoolmaster, and refer particularly to the advantages of the seminary opened at Berlin for preparing teachers for the Mark of Brandenburg; lay down minutely the scheme of elementary instruction, and actually specify the time to be devoted to the different branches, with each of the two classes composing the school; require the parochial clergy to visit the schools twice a week, and inspectors of circles to perform the same service at least once a year.

The decree of Frederick regulating the Catholic schools of Silesia, (1765,) is even more particular than the foregoing. It shows the settled policy in regard to educating teachers in special seminaries, now so important a part of the Prussian system, by setting apart certain schools by name for this purpose, requiring the appointment of a director to each, and assigning his duties.

In 1787, Frederick William the Second created a council of instruction, under the title of an "Upper School Board," (*Ober-Schul Collegium*,) of which the minister of state was president. The council was directed to examine text-books, and to pass upon the licenses of masters, on the reports of the provincial school-boards. They were authorized to erect seminaries for teachers at the government expense, and to frame their regulations; to send out an inspector from their body to examine any part of public instruction, and to rectify all wrongs by a direct order, or through the school-boards of the provinces, the school committees or patrons. This organization remained substantially in force until the separation of the departments of state and instruction in 1817, with the creation of a ministry of public instruction. The attributes of this upper school board, it will be seen, now belong to that council.

The school plan of 1763 was modified by an ordinance of 1794, which introduces geography and natural history in the elementary schools, and refers to vocal music as one of their most important exercises; it also attempts, by minute prescriptions, to introduce uniformity in the methods of

instruction and discipline. The regulation for the catholic schools of Silesia was also revised in 1801.

But the most important era in the history of public instruction in Prussia, as well as in other parts of Germany, opens with the efforts put forth by the king and people, to rescue the kingdom from the yoke of Napoleon in 1809. In that year the army was remodeled and every citizen converted into a soldier; landed property was declared free of feudal service; restrictions on freedom of trade were abolished, and the whole state was reorganized. Great reliance was placed on infusing a German spirit into the people by giving them freer access to improved institutions of education, from the common school to the university. Under the councils of Hardenberg, Humbolt, Stein, Altenstein, these reforms and improvements were projected, carried on, and perfected in less than a single generation.

The movement in behalf of popular schools commenced by inviting C. A. Zeller, of Wirtemberg, to Prussia. Zeller was a young theologian, who had studied under Pestalozzi in Switzerland, and was thoroughly imbued with the method and spirit of his master. On his return he had convened the school teachers of Wirtemberg in barns, for want of better accommodations being allowed him, and inspired them with a zeal for Pestalozzi's methods, and for a better education of the whole people. On removing to Prussia, he first took charge of the seminary at Koenigsberg, soon after founded the seminary at Karalene, and went about into different provinces meeting with teachers, holding conferences, visiting schools, and inspiring school officers with the right spirit.

The next step taken was to send a number of young men, mostly theologians, to Pestalozzi's institution at Ifferten, to acquire his method, and on their return to place them in new, or reorganized teachers' seminaries. To these new agents in school improvement were joined a large body of zealous teachers, and patriotic and enlightened citizens, who, in ways and methods of their own, labored incessantly to confirm the Prussian state, by forming new organs for its internal life, and new means of protection from foreign foes. They proved themselves truly educators of the people. Although the government thus not only encouraged, but directly aided in the introduction of the methods of Pestalozzi into the public schools of Prussia, still the school board in the different provinces sustained and encouraged those who approved and taught on different systems, such as Dinter, Zerrenner, Salzman, and Niemeyer—all, in fine, who labored with a patriotic purpose, thus allowing intellectual freedom, and appropriating whatever was good from all quarters toward the accomplishment of the great purpose.

To infuse a German spirit into teachers and scholars, particular attention was paid to the German language, as the treasury house of German ideas, and to the geography and history of the father land. Music, which was one of Pestalozzi's great instruments of culture, was made the vehicle of patriotic songs, and through them the heart of all Germany

was moved to bitter hatred of the conqueror who had desolated her fields and homes, and humbled the pride of her monarchy. All these efforts for the improvement of elementary education, accompanied by expensive modifications in the establishments of secondary and superior education, were made when the treasury was impoverished, and taxes, the most exorbitant in amount, were levied on every province and commune of the kingdom. Prof. Stephens, now of Girard College, in a letter to the Superintendent of Common Schools of Pennsylvania, written from Berlin, at a time when there was at least a talk of the repudiation of state debts, and especially when a distinguished citizen of that state had proposed to divert the money appropriated for the support of common schools to the payment of interest on the state debts, makes the following remarks on this period of the educational history of Prussia.

"Prussia, who furnishes us with a pattern of excellence in the present state of her public schools, affords us a still more brilliant example in the noble policy by which she sustained them in times of great public distress. Of all the nations of Europe, Prussia was reduced to the greatest extremity by the wars of Napoleon. In 1806, at the battle of Jena, her whole military force was annihilated. Within a week after the main overthrow, every scattered division of the army fell into the hands of the enemy. Napoleon took up his quarters in Berlin, emptied the arsenal, and stripped the capital of all the works of art which he thought worthy to be transported to Paris. By the treaty of Tilsit, in 1807, the king of Prussia was deprived of one-half of his dominions. A French army of 200,000 men were quartered upon the Prussians till the end of the year 1808. Prussia must pay to France the sum of 120,000,000 francs, after her principal sources of income had been appropriated by Napoleon, either to himself or his allies. The system of confiscation went so far that even the revenue from the endowments of schools, of poor houses, and the fund for widows, was diverted into the treasury of France. These last were given back in 1811. Foreign loans were made, to meet the exorbitant claims of the conqueror. An army must be created, bridges rebuilt, ruined fortifications in every quarter repaired, and so great was the public extremity that the Prussian ladies, with noble generosity, sent their ornaments and jewels to supply the royal treasury. Rings, crosses, and other ornaments of cast-iron were given in return to all those who had made this sacrifice. They bore the inscription, "*Ich gab gold um eisen*," (I gave gold for iron,) and such Spartan jewels are much treasured at this day by the possessors and their families. This state of things lasted till after the "War of Liberation," in 1812. But it is the pride of Prussia, that at the time of her greatest humiliation and distress, she never for a moment lost sight of the work she had begun in the improvement of her schools.

In 1809, the minister at the head of the section of instruction, writes as follows, to some teachers who had been sent to the institution of Pestalozzi to learn his method and principles of instructing:—"The section of public instruction begs you to believe, and to assure Mr. Pestalozzi, that the cause is the interest of the government, and of his majesty, the king, personally, who are convinced that liberation from extraordinary calamities is fruitless, and only to be effected by a thorough improvement of the people's education." In 1809, was established the teachers' seminary in Königsberg. In 1810, the seminary at Braunsburg. In 1811, the seminary at Karalene. In 1812, was established at Breslau, the first seminary, completely organized according to the new ideas. In 1809, the most amply endowed and completely organized of all the German universities

was founded in Berlin. Professors were called from all parts, and in 1810 the university was in full operation. In 1811, the old university of Breslau was reorganized, and large grants were received from the government for new buildings and new professorships. Is not this noble policy, on the part of an absolute government, at a time when the nation was struggling for existence, a severe rebuke upon the narrow and short-sighted expedients of those republican politicians, who can invent no better way to pay a public debt than by converting into money that institution on which the virtue and intelligence of the people, and the special safety of a republican state, mainly depend?"

The school system of Prussia, is not the growth of any one period, and is not found in one law, but is made up of an aggregation of laws and general regulations, enacted at different times for different provinces, differing in the condition, habits, and religion of the people, and to meet particular wants, as these have been developed in the progress of the system. An attempt was made in 1819 to prepare a general school law for Prussia, but without success. This is considered by Harnisch and other German educators, a great defect, as it leads to great inequalities of education, and great irregularities of administration in different provinces. The ordinance of 1819, however, embraces much of the regulations which are applicable to the whole kingdom, while the peculiarities and details of the system must be looked for in the provincial ordinances and special regulations.

The authorities which administer public instruction in Prussia are the following:—The chief authority is the minister, who joins to this supervision that of ecclesiastical and medical affairs. He is assisted by a council, consisting of a variable number of members, and divided into three sections corresponding to the three charges of the minister. The section for public instruction has its president and secretary, and meets usually twice a week for the transaction of business. One of this body is generally deputed as extraordinary inspector in cases requiring examination, and reports to the minister. The kingdom of Prussia is divided into ten provinces, each of which has its governor, styled Superior President, (Ober-President,) who is assisted by a council called a Consistory, (Consistorium.) This council has functions in the province similar to those in the ministerial council in the kingdom at large, and has direct control of secondary public instruction, and of the schools for the education of primary teachers. It is subdivided into two sections, of which one has charge of the primary instruction in the province, under the title of the School Board, (Provincial Schul Collegium.) The school board, in addition to exercising the general supervision of education in the province, examines the statutes and regulations of the schools, insures the execution of existing laws and regulations, examines text-books, and gives permission for their introduction, after having obtained the approbation of the ministry. This board communicates with the higher authorities, through their president, to whom the reports from the next lower authority, to be presently spoken of, are addressed, and by whom, when these relate to school matters, they are referred to the board for examination.

The next smaller political division to a province, is called a Regency, (Regierungs-Bezirk,) which is again subdivided into Circles, (Kreis,) and those into parishes, (Gemeinden.) The chief civil authority in the Regency, is a president, who is assisted by a council called also a regency.

This body is divided into three sections, having charge respectively of

the internal affairs, of direct taxes, and of church and school matters. The last named committee examines and appoints all the teachers of elementary and burgher schools within the regency, superintends the schools, ascertains that the school-houses and churches are duly kept in order, administers the funds of schools and churches, or superintends the administration, when vested in corporations, and collects the church and school fees. This committee is presided over by a member of the regency called the School Councillor, (*Schul-rath*.) As councillor, he has a seat and voice in the provincial consistory, where he is required to appear at least once a year, and to report upon their affairs in his regency, of which the provincial consistory has the superintendence. It is also his duty to visit the schools, and to satisfy himself that they are in good condition.

The next school authority is the inspector of a circle, who has charge of several parishes. These inspectors are generally clergymen, while the councillors are laymen. Next below the special superintendents is the immediate authority, namely, the school committee, (*Schul-Vorstand*.) Each parish (*Gemeinde*) must, by law, have its school, except in special cases, and each school its committee of superintendence, (*Schul-Vorstand*), consisting of the curate, the local magistrate, and from two to four notables; the constitution of the committee varying somewhat with the character of the school, whether endowed, entirely supported by the parish, in part by the province or state, or by subscription. The committee appoints a school inspector, who is usually the clergyman of the parish. In cities, the magistrates form the school committee, or school deputation, as it is there called, the curates still acting as local inspectors.

Thus, there is a regular series of authorities, from the master of the school up to the minister, and every part of primary instruction is entirely within the control of an impulse from the central government, and takes its direction according to the will of the highest authorities. With such a system, under a despotic government, it is obvious that the provisions of any law may be successfully enforced.

The cardinal provisions of the school system of Prussia, are:

First, That all children between the ages of seven and fourteen years shall go regularly to school. This is enforced by the school committee, who are furnished with lists of the children who should attend, and of those actually in the schools under their charge, and who are required to enforce the penalties of the law.

Second, That each parish shall, in general, have an elementary school. When the inhabitants are of different religious persuasions, each denomination has its school, and if not, provision is made for the religious instruction of the children by their own pastors. The erection of the school-house, its furniture, the income of the master, and aid to poor scholars, are all provided for. The requisite sum comes, in part, from parochial funds, and in part from a tax upon householders. When the parish is poor, it is assisted by the circle, by the province, and even by the state. Besides these elementary schools, most of the towns in Prussia have one or more upper primary or burgher schools.

Third, The education of teachers in seminaries, adapted to the grade of instruction to which they intend devoting themselves. Their exemption during their term of study from active military service required of other citizens. A provision for their support during their term of study. A preference given to them over schoolmasters not similarly educated. Their examination previous to receiving a certificate of capacity, which entitles them to become candidates for any vacant post in the province where they have been examined. Their subsequent exemption from active military service, and even from the annual drill of the militia, if they

can not, in the opinion of the school inspector, be spared from their duties. Provision for the removal of the incompetent or immoral. } A provision for the support of decayed teachers.

Fourth. The authorities which regulate the schools, and render them a branch of the general government, and the teachers in fact, its officers. In a country like Prussia, this connection secures to the teacher the respect due to his station, and thus facilitates the discharge of his important duties.

Under this system of organization and administration, and especially with these arrangements to secure the employment of only properly qualified teachers, the public schools of Prussia have been multiplied to an extent, and have attained within the last quarter of a century a degree of excellence, which has attracted the attention of statesmen, and commanded the admiration of intelligent educators in every part of Christendom. In the provinces, where the improved system has gone into operation with the habits of the people in its favor, it has already reached every human being; and in even the outer provinces, it is, as fast as time sweeps along new generations, replacing the adult population with a race of men and women who have been subjected to a course of school instruction far more thorough and comprehensive than has ever been attempted in any other country. As an evidence of the universality of the system it may be mentioned, that out of 122,897 men of the standing army, in 1846, only two soldiers were found who could not both read and write. But the system aims at much higher results—with nothing short of developing every faculty both of mind and body, of converting creatures of impulse, prejudice, and passion, into thinking and reasoning beings, and of giving them objects of pursuit, and habits of conduct, favorable to their own happiness and that of the community in which they live. The result which may be reasonably anticipated from this system—when the entire adult population have been subjected to its operation, and when the influences of the home and street, of the business and the recreations of society, all unite with those of the school—have not as yet been realized in any section of the kingdom. Every where the lessons of the school-room are weakened, and in a measure destroyed, by degrading national customs, and the inevitable results of a government which represses liberty of thought, speech, occupation, and political action. But the school, if left as good and thorough as it now is, must inevitably change the government, or the government must change the school. And even if the school should be made less thorough than it now is, no governmental interference can turn back the intelligence which has already gone out among the people. It would be easier to return the rain to the clouds, from which it has parted, and which has already mingled with the waters of every rising spring, or reached the roots of every growing plant.

The following Table exhibits the state of the Public Schools of Prussia, according to the latest official returns published by the government.

STATE OF THE PUBLIC SCHOOLS IN PRUSSIA IN 1944.

Name of the District.	Elementary Schools.				Schools of a higher description than Elementary.										Town Schools.				Normal Schools.	
	No. of Schools.	Teachers.		Scholars in Average Attendance.	Boys.			Girls.			Number of									
		Male.			Schola.	Teachers.	Schola.	Teachers.	Schola.	Teachers.	Schola.	Teachers.	Schola.	Teachers.	Schola.					
		Fixed.	Female.																	
1. Königsberg ..	1,598	1,750	173	88	57,892	56,838	17	42	7	1,402	18	98	10	1,928	6	81	15	1,088	8	130
2. Gumbinnen ..	1,083	1,181	41	5	40,198	39,044	18	46	..	2,040	19	86	8	1,965	2	15	2	508	3	136
3. Danzig	639	690	24	85	27,033	25,443	9	13	2	700	4	12	12	574	4	29	6	1,009	48	43
4. Marienwerder ..	1,044	1,097	15	7	40,210	38,008	5	13	2	875	5	17	6	619	4	16	6	884	65	187
5. Posen	1,091	1,860	31	659	67,982	66,124	7	17	..	874	7	17	6	984	4	5	27	5	672	1
6. Bromberg	694	747	23	14	29,323	27,623	6	12	..	837	6	8	8	444	1	1	..	29	2	48
7. Potsdam	1,087	237	27	134	14,098	12,720	13	27	61	1,797	45	97	138	5,157	9	68	59	2,950	1	33
8. Pfort Berlin ..	1,947	1,810	44	66	66,224	65,515	87	124	4	6,809	84	80	37	6,598	1	9	1	832	1	95
9. Hildesheim	1,265	1,568	81	19	67,476	66,028	14	38	..	1,963	16	44	14	2,638	6	40	5	1,275	2	140
10. Frankfurt	1,077	1,221	80	82	41,588	39,575	23	80	8	8,935	88	83	36	4,579	1	90	5	1,839	8	51
11. Gotha	1,023	1,915	70	9	80,853	79,347	14	69	4	2,885	15	80	9	2,719	1	7	..	184	1	51
12. Stralsund	379	386	10	86	12,431	11,475	11	23	2	766	9	13	12	460	8	6	..	249	2	24
13. Breslau	1,495	1,551	848	54	89,585	87,767	22	54	19	8,595	7	19	26	2,987	1	11	12	670	1	107
14. Oppeln	939	1,073	816	4	79,871	79,656	7	17	2	294	4	17	8	845	1	6	2	925	1	118
15. Lagnitz	1,939	1,224	275	5	66,905	68,054	17	48	10	2,925	21	42	47	2,511	3	16	8	571	1	91
16. Magdeburg	1,068	1,371	86	51	55,392	55,249	40	87	6	3,847	19	61	55	3,194	4	39	8	801	8	121
17. Merseburg	1,258	1,410	52	11	61,807	60,298	18	86	32	6,844	21	95	29	6,811	1	8	13	299	2	108
18. Erfurt	619	627	14	27	29,756	28,753	4	21	2	1,139	6	86	9	1,649	3	18	8	428	8	122
19. Münster	530	417	29	144	32,899	31,737	12	16	14	438	2	5	4	52	1	8	2	45	1	28
20. Minden	573	589	76	53	41,603	39,893	6	12	1	877	7	10	13	682	2	8	..	76	2	47
21. Arnberg	811	878	87	55	50,370	47,105	16	23	1	543	9	13	8	243	6	19	5	468	1	101
22. Coln	581	504	232	93	41,561	37,966	2	8	4	52	7	9	31	628	8	16	4	404	1	177
23. Dusseldorf	798	904	83	86	71,627	67,693	13	24	2	403	25	53	49	854	12	63	17	1,310	2	87
24. Coblenz	1,038	985	79	63	43,419	43,508	5	11	11	902	11	18	46	627	13	23	10	489	1	..
25. Trier	881	830	71	96	39,634	39,025	2	..	4	51	4	6	5	850	4	11	11	234	..	..
26. Aachen	583	551	101	60	34,229	31,702	1	1	..	11	6	8	19	568	4	13	7	561	..	..
Total	24,080	25,914	2,749	1,836	1,295,448	1,197,865	342	898	197	43,516	860	1,094	640	43,892	100	503	197	15,634	41	2,186

In 1848, the population of Prussia was about 16,000,000. According to the foregoing table, there were 24,030 elementary schools, with 2,433,333 children, between the ages of 6 and 14, in average daily attendance; 1,202 middle or burgher schools with 91,898 pupils, and 100 higher, or town schools, with 15,624 pupils, making an aggregate of 25,332 public primary schools, and 2,540,775 pupils. To these schools should be added 117 gymnasia for classical education, with 29,474 pupils, and 1,664 professors; 7 universities with 4,000 students and 471 professors, and libraries with over 1,000,000 volumes; 382 institutions, in the nature of infant schools, with 25,000 children, and a large number of schools for special instruction, as for the blind, deaf mutes, commerce, trades, arts, &c.; and Prussia can present an array of institutions, teachers, professors, and educational facilities, for all classes of her population, not surpassed by any other country.

If to the number of children at school, public or private, we add those who are receiving instruction at home, or who have left school after obtaining the certificate of school attendance up to the age of twelve years, and of their being able to read, write, and cipher, and those who are detained from school temporarily by sickness, we can easily acquiesce in the claim of the director of the Statistical Bureau, by whom the annual school returns are collected, and published every three years, that every child under fourteen years of age has already attended school public or private, or has acquired that degree of instruction which makes self-education in almost any direction practicable. From an investigation made by the government in 1845, there were, in the whole of Prussia, only two young men in every one hundred between the ages of twenty and twenty-two, who could not read, write, and cipher, and had not a knowledge of Scripture history.

According to the foregoing table, there were 34,030 primary school teachers employed in, viz.:

Elementary schools.	Head teachers,	. . . . .	25,914
"	"	Assistants,	. . . . . 2,749
"	"	Schoolmistresses,	. . . . . 1,856
Middle or Burgher schools for boys.	Head teachers,	. . . . .	898
"	"	"	Assistants, 197
"	"	"	girls. Head teachers, 1,094
"	"	"	" Schoolmistresses, 640
Higher Burgher.	Head teachers,	. . . . .	505
"	"	Assistants,	. . . . . 197
Total,			34,030

These thirty-four thousand teachers had all been thoroughly educated in the studies they were called on to teach, and the best methods of teaching the same in seminaries established for this purpose, of which there were forty-six, supported by the government, in 1848. By means of educational periodicals, and frequent meetings for professional im-

provement, these teachers are bound together into a great association, stimulating each other to higher attainments, and marching forward a noble army for the improvement, and not the destruction of the people.

The following statistics will show how steadily the primary schools have advanced in numbers, attendance, and teachers, since 1819:

1. In 1819, the number of schools in Prussia was	20,085
In 1825, " " " "	21,625
In 1831, " " " "	22,612
In 1843, " " " "	23,646
In 1846, " " " "	25,332
2. In 1819, the number of teachers in Prussia was	21,895
In 1825, " " " "	22,965
In 1831, " " " "	27,749
In 1843, " " " "	29,631
In 1846, " " " "	32,316
3. In 1825, the number of children between seven and four- teen years of age, was	1,923,200
And the number of these who were attending the schools, was	1,664,218
In 1831, the number of children between seven and four- teen years of age, was	2,043,030
And the number of these who were attending the schools, was	2,021,421
In 1843, the number of children between seven and four- teen years of age, was	2,992,124
And the number of these who were attending the schools, was	2,328,146
In 1846, the number of children in public schools,	2,540,775

These great results have been obtained by the united efforts of the government and the people; but even these statistics can not show the improvement which has been made in school-houses, school instruction, and the whole internal economy of the school-room.

V. SUBJECTS AND METHODS OF INSTRUCTION

IN

THE PRIMARY SCHOOLS OF PRUSSIA.

BEFORE presenting an outline of the course of instruction pursued in the common schools of Prussia, gathered from the observations of distinguished educators in their visits to a large number of schools of different grades, as well as from published accounts of the organization and studies of particular schools, we will introduce a brief view* of the general objects and different degrees of primary education, and of the manner in which the schools are established and conducted.

Two degrees of primary instruction are distinguished by the law; the *elementary schools* and the *burgher schools*. The elementary schools propose the development of the human faculties, through an instruction in those common branches of knowledge which are indispensable to every person, both of town and country. The burgher schools (*Beurgerschulen Stadtschulen*†) carry on the child until he is capable of manifesting his inclination for a classical education, or for this or that particular profession. The gymnasia continue this education until the youth is prepared, either to commence his practical studies in common life, or his higher and special scientific studies in the university.

These different gradations coincide in forming, so to speak, a great establishment of national education, one in system, and of which the parts, though each accomplishing a special end, are all mutually correlative. The primary education of which we speak, though divided into two degrees, has its peculiar unity and general laws; it admits of accommodation, however, to the sex, language, religion, and future destination of the pupils. 1. Separate establishments for girls should be formed, wherever possible, corresponding to the elementary and larger schools for boys. 2. In those provinces of the monarchy (as the Polish) where a foreign language is spoken, besides lessons in the native idiom, the children shall receive complete instruction in German, which is also to be employed as the ordinary language of the school. 3. Difference of religion in Christian schools necessarily determines differences in religious instruction. This instruction shall always be accommodated to the spirit and doctrines of the persuasion to which the school belongs. But, as in every school of a christian state, the dominant spirit (common to all creeds) should be piety, and a profound reverence of the Deity, every Christian school may receive the children of every sect. The

* Mainly in the language of the law and ordinance, as translated and condensed by Sir William Hamilton, in an article in the *Edinburgh Review*.

† Called likewise *Mittelschulen*, middle schools, and *Realschulen*, real schools; the last, because they are less occupied with the study of language (*Verbalis*) than with the knowledge of things, (*Realia*.)

masters and superintendents ought to avoid, with scrupulous care, every shadow of religious constraint or annoyance. No schools should be abused to any purposes of proselytism; and the children of a worship different from that of the school, shall not be obliged, contrary to the wish of their parents or their own, to attend its religious instruction and exercises. Special masters of their own persuasion shall have the care of their religious education; and should it be impossible to have as many masters as confessions, the parents should endeavor, with so much the greater solicitude, to discharge this duty themselves, if disinclined to allow their children to attend the religious lessons of the school. The primitive destination of every school, says the law, is so to train youth that, with a knowledge of the relations of man to God, it may foster in them the desire of ruling their life by the spirit and principles of Christianity. The school shall, therefore, betimes second and complete the first domestic training of the child to piety. Prayer and edifying reflections shall commence and terminate the day; and the master must beware that this moral exercise do never degenerate into a matter of routine. Obedience to the laws, loyalty, and patriotism, to be inculcated. No humiliating or indecent castigation allowed; and corporal punishment, in general, to be applied only in cases of necessity. Scholars found wholly incorrigible, in order to obviate bad example, to be at length dismissed. The pupils, as they advance in age, to be employed in the maintenance of good order in the school, and thus betimes habituated to regard themselves as active and useful members of society.

The primary education has for its scope the development of the different faculties, intellectual and moral, mental and bodily. Every *complete elementary school* necessarily embraces the nine following branches: 1. Religion—morality established on the positive truths of Christianity; 2. The German tongue, and in the Polish provinces, the vernacular language; 3. The elements of geometry and general principles of drawing; 4. Calculation and applied arithmetic; 5. The elements of physics, of general history, and of the history of Prussia; 6. Singing; 7. Writing; 8. Gymnastic exercises; 9. The more simple manual labors, and some instruction in the relative country occupations.

Every *burgher school* must teach the ten following branches: 1. Religion and morals. 2. The German language, and the vernacular idiom of the province, reading, composition, exercises of style, exercises of talent, and the study of the national classics. In the countries of the German tongue, the modern foreign languages are the objects of an accessory study. 3. Latin to a certain extent. (This, we believe, is not universally enforced.) 4. The elements of mathematics, and in particular a thorough knowledge of practical arithmetic. 5. Physics, and natural history to explain the more important phenomena of nature. 6. Geography, and general history combined; Prussia, its history, laws, and constitution, form the object of a particular study. 7. The principles of design; to be taught with the instruction given in physics, natural history, and geometry. 8. The penmanship should be watched.

and the hand exercised to write with neatness and ease. 9. Singing, in order to develop the voice, to afford a knowledge of the art, and to enable the scholars to assist in the solemnities of the church. 10. Gymnastic exercises accommodated to the age and strength of the scholar. Such is the minimum of education to be afforded by a burgher school. If its means enable it to attempt a higher instruction, so as to prepare the scholar, destined to a learned profession, for an immediate entrance into the gymnasia, the school then takes the name of *Higher Town School*.

Every pupil, on leaving school, should receive from his masters and the committee of superintendence, a certificate of his capacity, and of his moral and religious dispositions. These certificates to be always produced on approaching the communion, and on entering into apprenticeship or service. They are given only at the period of departure; and in the burgher schools, as in the gymnasia, they form the occasion of a great solemnity.

Every half year pupils are admitted; promoted from class to class; and absolved at the conclusion of their studies.

Books of study to be carefully chosen by the committees, with concurrence of the superior authorities, the ecclesiastical being specially consulted in regard to those of a religious nature. For the Catholic schools, the bishops, in concert with the provincial consistories, to select the devotional books; and, in case of any difference of opinion, the Minister of Public Instruction shall decide.

Schoolmasters are to adopt the methods best accommodated to the natural development of the human mind; methods which keep the intellectual powers in constant, general, and spontaneous exercise, and are not limited to the infusion of a mechanical knowledge. The committees are to watch over the methods of the master, and to aid him by their council; never to tolerate a vicious method, and to report to the higher authorities should their admonition be neglected. Parents and guardians have a right to scrutinize the system of education by which their children are taught; and to address their complaints to the higher authorities, who are bound to have them carefully investigated. On the other hand, they are bound to cooperate with their private influence in aid of the public discipline; nor is it permitted them to withdraw a scholar from any branch of education taught in the school as necessary.

As a national establishment, every school should court the greatest publicity. In those for boys, besides the special half yearly examinations, for the promotion from one class to another, there shall annually take place public examinations, in order to exhibit the spirit of the instruction, and the proficiency of the scholars. On this solemnity, the director, or one of the masters, in an official programme, is to render an account of the condition and progress of the school. In fine, from time to time, there shall be published a general report of the state of education in each province. In schools for females, the examinations take

place in presence of the parents and masters, without any general invitation.

But if the public instructors are bound to a faithful performance of their duties, they have a right, in return, to the gratitude and respect due to the zealous laborer in the sacred work of education. The school is entitled to claim universal countenance and aid, even from those who do not confide to it their children. All public authorities, each in its sphere, are enjoined to promote the public schools and to lend support to the masters in the exercise of their office, as to any other functionaries of the state. In all the communes of the monarchy, the clergy of all Christians persuasions, whether in the church, in their school visitation, or in their sermons on the opening of the classes, shall omit no opportunity of recalling to the schools their high mission, and to the people their duties to these establishments. The civil authorities, the clergy, and the masters, shall every where cooperate in tightening the bonds of respect and attachment between the people and the school; so that the nation may be more habituated to consider education as a primary condition of civil existence, and daily take a deeper interest in its advancement.

The following extracts from Kay's "*Social Condition and Education of the People*," will show how these provisions of the law, and governmental instructions are carried into practice.

The three great results, which the Prussian government has labored to ensure by this system of education are—

1. To interest the different parishes and towns in the progress of the education of the people, by committing the management of the parochial schools to them, under certain very simple restrictions.

2. To assist the parochial school committees in each county with the advice of the most able inhabitants of the county; and—

3. To gain the cordial cooperation of the ministers of religion.

These results the government has gained, to the entire and perfect satisfaction of all parties. The provincial and county councils act as advisers of the parochial committees. These latter are the actual directors of parochial education; and the clergy not only occupy places in these parochial committees, but are also the *ex-officio* inspectors of all the schools.

The system is liberally devised; and I am persuaded that it is solely owing to its impartial, popular, and religious character, that it has enlisted so strongly on its side the feelings of the Prussian people.

I know there are many in our land who say, "But why have any system at all? Is it not better to leave the education of the people to the exertions of public charity and private benevolence?" Let the contrast between the state of the education and social condition of the poor in England and Germany be the answer. In England it is well known that not one half of the country is properly supplied with good schools, and that many of those, which do exist, are under the direction of very inefficient and sometimes of actually immoral teachers. In Germany and Switzerland, every parish is supplied with its school buildings, and each school is directed by a teacher of high principles, and superior education and intelligence. Such a splendid social institution has not existed without effecting magnificent results, and the Germans and Swiss may now proudly point to the character and condition of their peasantry.

So great have been the results of this system, that it is now a well known fact, that, except in cases of sickness, every child between the ages of six and ten in the whole of Prussia, is receiving instruction from highly educated teachers, under

the surveillance of the parochial ministers. And, if I except the manufacturing districts, I may go still farther, and say, that every child in Prussia, between the ages of six and fourteen, is receiving daily instruction in its parochial school. But even this assertion does not give any adequate idea of the vastness of the educational machinery, which is at work; for the Prussian government is encouraging all the towns throughout the country to establish infant schools for the children of parents who are forced, from the peculiar nature of their labor, to absent themselves from home during the greater part of the day, and who would be otherwise obliged to leave their infants without proper superintendence; and, as all the children in the manufacturing districts, who are engaged in the weaving-rooms, are also obliged to attend evening classes to the age of fourteen years, I may say, with great truth, that *nearly all the Prussian children between the ages of four and fourteen are under the influence of a religious education*. And let it not be supposed that an arbitrary government has forced this result from an unwilling people. On the contrary, as I have said before, the peasants themselves have always been at least as anxious to obtain this education for their children, as the government has been desirous of granting it.

A proof of the satisfaction, with which the Prussian people regard the educational regulations, is the undeniable fact, that all the materials and machinery for instruction are being so constantly and so rapidly improved over the whole country, and by the people themselves. Wherever I traveled, I was astonished to see the great improvement in all these several matters that was going on. Every where I found new and handsome school-houses springing up, old ones being repaired, a most liberal supply of teachers and of apparatus for the schools provided by the municipal authorities, the greatest cleanliness, lofty and spacious school-rooms, and excellent houses for the teachers; all showing, that the importance of the work is fully appreciated *by the people*, and that there is every desire on their part to aid the government in carrying out this vast undertaking.

The children generally remain in school, until the completion of their fourteenth year; and a law has been issued, for one or two of the provinces, appointing this as the time, after which the parents may remove their children. But if the parents are very poor, and their children have learnt the doctrines of their religion, as well as to read, write, and cipher, their religious minister can, in conjunction with the teacher, permit them to discontinue their attendance at the completion of their twelfth year.

"No child, without the permission both of the civil magistrate of the town or village of which its parents are inhabitants, and also of their religious minister, can be kept from school beyond the completion of its fifth year, or afterward discontinue its attendance on the school classes for any length of time."

If a parent neither provides at home for the education of his children, nor sends them to the school, the teacher is bound to inform the religious minister of the parent; the minister then remonstrates with him; and if he still neglects to send his children, the minister is bound by law to report him to the village committee, which has power to punish him by a fine, of from one halfpenny to sixpence a day, for neglecting the first and greatest duty of every parent. If the village committee can not induce him to educate his children, he is reported to the union magistrates, who are empowered to punish him with imprisonment. But it is hardly ever necessary to resort to such harsh measures, for the parents are even more anxious to send their children to these admirably conducted schools, than the civil magistrate to obtain their attendance. In order, however, to ensure such a regular attendance, and as an assistance to the parents themselves, each teacher is furnished by the local magistrate, every year, with a list of all the children of his district, who have attained the age, at which they ought to attend his classes. This list is called over every morning and every afternoon, and all absences are marked down, so that the school committees, magistrates, and inspectors may instantly discover if the attendance of any child has been irregular. If a child requires leave of absence for more than a week, the parent must apply to the civil magistrate for it; but the clergyman can grant it, if it be only for six or seven days, and the teacher alone can allow it, if for only one or two days.

At the German revolutions of 1848, one of the great popular cries was for *gratuitous* education. The governments of Germany were obliged to yield to this

ory, and to make it the law of nearly the whole of Germany, that all parents should be able to get their children educated at the primary schools without having to pay any thing for this education.

There are now, therefore, no school fees in the greatest part of Germany. Education is perfectly gratuitous. The poorest man can send his child free of all expense to the best of the public schools of his district. And, besides this, the authorities of the parish or town, in which a parent lives, who is too poor to clothe his children decently enough for school attendance, are obliged to clothe them for him, and to provide them with books, pencils, pens, and every thing necessary for school attendance, so that a poor man, instead of being obliged to pay something out of his small earnings for the education of his children, is, on the contrary, actually paid for sending them to school. This latter is an old regulation, and is one which has aided very greatly to make the educational regulations very popular among the poor of Germany.

I made very careful inquiries about the education of children in the principal manufacturing district of Prussia. I remained several days in Elberfeld, their largest manufacturing town, on purpose to visit the factory schools. I put myself there, as elsewhere, in direct communication with the teachers, from whom I obtained a great deal of information; and I also had several interviews on the subject with the educational councillors at Berlin, who put into my hand the latest regulations on this subject issued by the government.

The laws relating to the factory children date only from 1839. They are as follows :—

"No child may be employed in any manufactory, or in any mining or building operations, before it has attained the age of *nine* years.

"No child, which has not received three years' regular instruction in a school, and has not obtained the certificate of a school committee, that it can read its mother tongue fluently, and also write it tolerably well, may be employed in any of the above-mentioned ways, before it has completed its sixteenth year.

"An exception to this latter rule is only allowed in those cases, where the manufacturers provide for the education of the factory children, by erecting and maintaining factory schools."

If a manufacturer will establish a school in connection with his manufactory, and engage a properly educated teacher, he is then allowed to employ any children of nine years of age, whether they have obtained a certificate or not, on condition, however, that these children attend the school four evenings in every week, as well as two hours every Sunday morning, until they have obtained a certificate of proficiency in their studies.

The "schulrath," or educational minister in the county court, decides whether the factory school is so satisfactorily managed, as to entitle the manufacturer to this privilege. This minister also regulates the hours which must be devoted weekly to the instruction of the factory children.

"Young people, under sixteen years of age, may not be employed in manufacturing establishments more than ten hours a day."

The civil magistrates are, however, empowered, in some cases, to allow young people to work eleven hours a day, when an accident has happened, which obliges the manufacturer to make up for lost time, in order to accomplish a certain quantity of work before a given day. But these licenses can not be granted for more, at the most, than four weeks at a time.

After the hours of labor have been regulated by the "schulrath" and the manufacturer, the latter is obliged by law to take care that the factory children have, both in the mornings and in the afternoons, a quarter of an hour's exercise in the open air, and that at noon, they always have a good hour's relaxation from labor.

"No young person, under sixteen years of age, may, in any case, or in any emergency, work more than eleven hours a day." The children of Christian parents, who have not been confirmed, may not work in the mills during the hours set apart by the religious minister, for the religious instruction, which he wishes to give them preparatory to their confirmation.

The manufacturers, who employ children in the mills, are obliged to lay before the magistrate a list, containing the names of all the children they employ, their respective ages, their places of abode, and the names of their parents. If any in-

spector or teacher reports to the civil magistrate, that any child under the legal age is being employed in the mills instead of being sent to school, or if the police report the infringement of any other of the above-mentioned regulations, the magistrate is empowered and obliged to punish the manufacturer by fines, which are increased in amount on every repetition of the offense.

I examined the actual state of things in Elberfeld, one of the most important of the manufacturing districts of Prussia, and I found these regulations most satisfactorily put in force. No children were allowed to work in the mills, before they had attained the age of nine years, and after this time, they were required to attend classes four evenings every week, conducted by the teachers of the day-schools; or, if their work was of such a nature as to prevent such attendance, then they were obliged to attend classes every Sunday morning for two hours; and this attendance was required to be continued, until the children could obtain a certificate from their teacher and religious minister, that they could read and write well, that they were well versed in Scripture history, and that they knew arithmetic sufficiently well to perform all the ordinary calculations, which would be required of them. As a check upon the parents and manufacturers, no child was allowed to labor in the mills, without having obtained a certificate, signed by its religious minister and its teacher, that it was attending one of these classes regularly. If the attendance was irregular, this certificate was immediately withdrawn, and the child was no longer allowed to continue working in the mills. But, from all I saw of these schools, and from what the teachers told me, I should say, they had no difficulty in enforcing attendance; and, so far from it being evident, that the parents were anxious to send their children into the mills, as soon as possible, I was astonished to find even the daily schools filled to overflowing, and that with children, many of whom were thirteen, fourteen, and fifteen years of age.

It is very easy for the traveler, who is merely passing through the manufacturing towns of the Rhine Provinces, to prove to himself, how anxious both the people and the government are to carry all these regulations into effect. Let him only take the trouble of wandering into the streets of such a town, at a quarter to eight in the morning, or at a quarter to one in the afternoon, and he will find them alive with children of remarkably courteous and gentle appearance, all very neatly and cleanly dressed, each carrying a little bag containing a slate and school books, and all hurrying along to school. Let him visit the same streets at any time during the school hours, and he will find an absence of young children, which, accustomed as he is to the alleys of our towns, swarming with poor little creatures growing up in filth, and coarseness, and immorality, will be even more astonishing and delightful.

Before Prussia began in good earnest to promote the education of the people, it was thought there, as it is in England at the present day, that private charity and voluntary exertions would suffice, to supply the country with all the materials of education. In the early part of the eighteenth century the government unenacted, in formal edicts, that it was the first duty of a parish to educate its young. For nearly one hundred years, it trusted to the voluntary principle, and left the work in the hands of generous individuals; the result was what might have been expected, and what may be observed in England: the supply of the materials of education did not keep pace with the growth of the population. Prussia was little or no better provided with schools in 1815, than it had been in 1715; as to the teachers, they were poor, neglected, ignorant persons. Educated persons would not become teachers of the poor; and the poor were neither able nor willing to pay for the education of teachers for their children. A sufficient number of benevolent individuals could not be found to bear the whole expense of educating the nation; and even in those parishes, in which the benevolent part of the richer classes had managed to collect funds, sufficient for carrying on such a work for a year or two, it was found, that they were unable or unwilling, for any length of time, to bear alone such a great and ever-increasing burden.

After a long trial of this unfair voluntary system, which taxed charitable individuals in order to make up for the default of the selfish or careless, it was found, in 1815, as in England at the present day, that great numbers of parishes had no schools at all; that of the schools which were built, scarcely any were properly supplied with the necessary books and apparatus; that there were no good teach-

ers in the country, and no means of educating any; and that the science of pedagogy had been totally neglected, and was universally misunderstood.

If then, the people were to be educated,—and the French revolution of 1789 had taught the Prussian government the necessity of enlightening the poor and of improving their social condition, it became but too evident, that the government must act as well as preach. In a word, the experience of one hundred years taught the Prussians, that it was necessary to *compel* the ignorant, slothful, and selfish members of the political body to assist the benevolent and patriotic, or that sufficient funds would never be found for educating the whole of the laboring classes. The following regulations, therefore, were put into and are still in force throughout Prussia.

The inhabitants of each parish are obliged, either alone, or in company with one or more neighboring parishes, to provide sufficient school-room, a sufficient number of teachers, and all the necessary school apparatus for the instruction of all their children, who are between the ages of six and fourteen. I shall show by what parochial organization this is effected.

I. *Where all the inhabitants of a village are members of the same religious denomination.*

In these cases, whenever more school-room, or a greater number of teachers, or more apparatus, or any repairs of the existing school-buildings is required, the village magistrate, having been informed of these deficiencies by the district school-inspector, immediately summons a committee of the villagers, called the “Schulvorstand.”

This Schulvorstand consists—

1. Of the religious minister of the parish. He is the president of the committee or Schulvorstand. In some parts of Prussia, however, there are still some few remnants of the old aristocracy, who possess great estates; and where the village is situated on one of these estates, there the landlord is the president of the school committee. This, however, is so rare an exception, that it is not necessary further to notice it.

2. Of the village magistrate, who is selected by the county magistrates, from the most intelligent men in the parish.

3. Of from two to four of the heads of families in the parish. These members of the committee are elected by the parishioners, and their election is confirmed or annulled by the union magistrates. If the union magistrate annuls the election, because of the unfitness of the persons chosen, the parish can proceed to a second election; but, if they again select men, who are not fit to be entrusted with the duties of the school committee, the election is again annulled, and the union magistrate himself selects two or four of the parishioners, to act as members of the committee. When the village is situated on the estate of a great landed proprietor, he also can annul the choice of the parishioners; but these cases, as I have before said, are very rare, and are confined almost entirely to the eastern provinces of Prussia, where the Polish nobles still retain some of their former possessions; for in the other provinces of Prussia, the land is now almost as much subdivided as in France, and is generally the property of the peasants.

The members of these committees are chosen for six years, at the end of which time a new election takes place.

If several parishes join in supporting *one* school, each of them must be represented in the school committee, by at least one head of a family. The county court, however, has the power of preventing this union of parishes, for the support of one joint school,—

1. When the number of children is so great, as to make it difficult to instruct them all in two classes.

2. When the parishes are separated too far apart, or when the roads between them are bad, dangerous, or at times impassable.

In such cases there must be separate schools; or else the great law of the land, that “*all the children must be educated*,” would often be infringed.

II. *Where the inhabitants of a village are members of different religious denominations.*

Sometimes it happens, that a parish contains persons of different religious opinions; and then arises the question, which has been a stumbling-block to the

progress of primary education in England, "how shall the rival claims of these parties be satisfied, so that the great law of Germany, that '*all the children must be educated*,' may be carried into effect?"

In these cases, the governments of Germany leave the parishes at perfect liberty to select their own course of proceeding, and to establish separate or mixed schools, according as they judge best for themselves. The only thing the government requires is, that schools of one kind or another shall be established.

If the inhabitants of such a parish in Prussia determine on having separate schools, then separate school committees are elected by the different sects. The committee of each sect consist of, the village magistrate, the minister, and two or three heads of families, of the religious party for which the committee is constituted.

If the inhabitants, however, decide on having one mixed school for all the religious parties, the committee consists of, the village magistrate, the religious ministers of the different parties, and several of the parishioners, elected from among the members of the different sects, for which the school is intended.

In these cases, the teacher is chosen from the most numerous religious party; or, if the school is large enough to require two teachers, the head one is elected from the members of the most numerous party, and the second from those of the next largest party. If there is only one teacher, children of those parents who do not belong to the same religious sect as the teacher, are always allowed to absent themselves during the hour in which the teacher gives the religious lessons, on condition that the children receive religious instruction from their own religious ministers.

One of the educational councillors at Berlin informed me, that the government did not encourage the establishment of mixed schools, as they think, that in such cases, the religious education of both parties, or at least of one of them, often suffers; but, he continued, "of course we think a mixed school infinitely better than none at all; and, when a district is too poor to support separate schools, we gladly see mixed ones established." The gentleman who said this was a Roman Catholic. In the towns, there are not often mixed schools containing Romanists and Protestants, as there generally are sufficient numbers of each of these sects in every town, to enable the citizens to establish separate schools. The children of Jews, however, are often to be found, even in the towns, in the schools of the other sects; but, owing to the entire and uncontrolled liberty of decision that the people themselves possess on this point, there seems to be little difficulty in arranging matters, and no jealousy whatever exists between the different parties. If a mixed school is established in any parish, and the teacher is chosen from the most numerous sect, and if the minor party becomes discontented or suspicious of the education given in the school, it is always at liberty to establish another school for itself; and it is this liberty of action, which preserves the parishes, where the mixed schools exist, from all intestine troubles and religious quarrels, which are ever the most ungodly of disputes. In leaving the settlement of this matter to the parishes, the government appears to have acted most wisely; for, in these religious questions, any interference from without is sure to create alarm, suspicion, and jealousy, and cause the different parties to fly asunder, instead of coalescing. All that the government does, is to say, "You must provide sufficient school-room, and a sufficient number of good teachers, but decide yourselves how you will do this." The consequence is, that the people say, "We can try a mixed school first; and, if we see reason to fear its effects, we will then amicably decide on erecting another separate one." So that the great difficulty arising from religious difference has been easily overcome.

The duties of the school committees, when once formed, are:—

1st. To take care that the parish is supplied with sufficient school-room for all the children, who are between the ages of five and fourteen.

2d. To supply the school-room with all the books, writing materials, slates, blackboards, maps, and apparatus necessary for instruction.

3d. To provide the teachers with comfortable houses for themselves and families.

4th. To keep all the school-buildings, and the houses of the teachers, in good repair, often whitewashed, and well warmed.

5th. To take care that the salary of the teachers is paid to them regularly.

6th. To assist those parents who are too poor to provide their children with clothes sufficiently decent for their school attendance.

7th. To assist, protect, and encourage the teachers.

8th. To be present at all the public examinations of the school, at the induction of the teachers, which is a public ceremony performed in church before all the parishioners, and at all the school fête days.

If the school is not endowed, the committee is empowered to impose a tax on the householders for its support, and for the payment of the schoolmaster; and it is held responsible by the higher authorities for his regular payment, according to the agreement, which was made with him on his introduction. The school committee, however, can not discharge the teacher, it can only report him to the higher authorities; for in Prussia none of the local authorities, who are in immediate contact with the teacher, and who might, consequently, imbibe personal prejudices against him, are allowed to exercise the power of dismissing him. This is reserved for those, who are never brought into personal connection with him, and who are not, therefore, so likely to imbibe such prejudices. Neither can the committee interfere with the interior discipline of the school; it can only inspect the condition of the school, and report to the county authorities. When the committee has once elected the teacher, he is entirely free to follow his own plans of instruction, unfettered by the interference of local authorities, as he is presumed to understand his own business, better than any of those about him. If the school-committee neglects its duties, or refuses to furnish the teacher with the necessary apparatus, or to keep the school-house in proper repair, or to pay the teacher regularly, he has always the power of appealing to the inspectors, or to the county courts, who instantly compel the local authorities to perform their appointed duties.

When a new school is required, the school committee selects the site and plan of the buildings, and sends them for confirmation to the county magistrate. If this magistrate sees any objection to the plans, he returns them to the committee, with his suggestions; the plans are then reconsidered by the committee, and returned with the necessary emendations to the magistrate, who then gives his sanction to them. Before this sanction has been obtained, the plans can not be finally adopted by the committee.

It is already very evident, by what I have said, how very much liberty of action is left to the people themselves. True it is, that in the election of members of the committees, as well as in the choice of plans and sites for school-houses, and in the determination of the amount of the school-rate, the county magistrates have a negative; but this is only a necessary precaution against the possibility of a really vicious selection of members, or of unhealthy or otherwise unsuitable sites for the school-houses, or of a niggardly and insufficient provision for the support of the school. Such a limited interference is always necessary, where the interests of the acting parties might otherwise tempt them to disregard the spirit of the law, and to sacrifice some great public good to the selfishness or ignorance of private individuals.

Every landed proprietor is obliged by law, to provide for the education of the children of all laborers living on his estates, who are too poor themselves to do so. Every such proprietor is also obliged by law, to keep the schools situated upon his estates in perfect repair, and in a perfect state of cleanliness; to conform to all the regulations, of which I shall speak hereafter, and which relate to the election and support of the teachers; and to furnish all the wood necessary for the repairs and warming of the school-buildings, and all the apparatus, books, &c., necessary for instruction.

This is what ought to be done in England. If it is right, that the law should grant to the proprietors such full powers over their property even after death, and should enable them to tie up their land in their own family for so long a time, and thus prevent the land dividing and getting into the hands of the poor, as it does abroad, it is but just, that the landlords should be compelled by law to do, at least, as much for their tenants in this country, as they are compelled to do in countries where the poor are much more favored than they are here, and where the interests of landlords are much less protected by law, than they are with us.

It sometimes happens, that a parish is so poor, as not to be able to build the new school-house, of which it stands in need. In these cases, in order that the great law of the land "*that every child must be educated*" should be carried into execution, it is necessary that the poor parish should receive assistance from without. This is provided for by a law, which requires that each county court shall assist, within its district, every parish, which is not able to provide alone for the expenses of the education of its children. If a county court should, from the number of calls upon its treasury, find itself unable to supply enough to assist all the parishes of the county which need assistance, the government at Berlin grants assistance to the county court; for, whatever else is neglected for want of funds, great care is taken that all necessary means for the education of the people shall be every where provided.

The school organization of the Prussian towns differs somewhat from that of the Prussian villages. I have already mentioned, that the superior village magistrates are appointed by the state, and that in each village there is one of these civil magistrates, who is a member of the village school committee, and is held responsible, if sufficient means are not provided for the education of the people of his district. But, in the towns, the magistrates are elected by the citizens; and, strange as it may seem, the municipal corporations have long been, on the whole, liberally constituted. The privilege of citizenship in any town is acquired, by good character and honest repute. The magistrates, who have been themselves elected by the citizens, can admit such inhabitants of the town, as they think worthy of the position, to the rank of citizens. But all citizens, who possess any ground of the value, in small towns, of 50*l.*, or in large towns, of about 250*l.* in Prussian money, and all citizens who, without possessing any ground, have incomes of at least 35*l.* per annum, in Prussian money, are by law entitled to a vote in the election of the town magistrates. The citizens, who are entitled to a vote, elect, every three years, a number of representatives, or, as they are called, town councillors. No person can be elected to the office of town councillor, unless he possess land of the value, in small towns, of at least 150*l.*, and in large towns of at least 200*l.*, or whose income does not amount to at least 35*l.* per annum. The number of these councillors depends on the size of the towns; no town can elect fewer than nine, or more than sixty. The manner in which they are elected, differs in different towns, but I believe the ordinary custom is, for each division of a town to elect one or more to represent it in the general council. These councillors, when elected, proceed to the election of a certain number of magistrates, whose offices last from six to twelve years, and these magistrates appoint from among themselves a mayor, who is chosen also for twelve years. The county court, under which the town finds itself ranged, has the power of annulling the election of the mayor, and of any of the magistrates, whom it may judge unfit for their office; and, in such a case, the magistrates or the town councillors, as the case may be, are obliged to proceed to another election. Such is a bare outline of the Prussian municipal system. With the various civic and political duties of the different authorities, I have no concern here, further than they relate to the education of the people.

In each town a committee is chosen, which is called the "*schuldeputation*," or, as I shall translate it, the school committee. It consists of from one to three, but of never more than three, of the town magistrates, of an equal number of deputies from the town councillors, an equal number of citizens, having the reputation of being interested and skilled in school matters, (these are commonly selected from among the religious ministers,) and also of the several representatives of those privately endowed schools in the town, which are not supported by the town, but yet fall under the surveillance and direction of its municipal authorities. The number of these representatives varies, according to the size of the town. With the exception of the representatives of the private schools, the members of this committee are chosen by the magistrates, who are themselves, as I have before said, elected by the citizens; but the representatives of the private schools, which are not supported by the town funds, are nominated by the county courts. To these members, thus elected, is joined one member from each of the committees, which are elected from the magistrates and town councillors for the different municipal affairs, if the former election should not have admitted any such

members into the school committee. The first ecclesiastical authority of the town is also, *ex-officio*, a member of the committee; and if the town contains both Romanists and Protestants, the committee must be composed of equal proportions of members of the different parties. The county courts have the power of annulling the election of any member, if they see reason to deem him unfit for the exercise of the duties of his office, and in such a case, the town authorities are obliged to proceed to make a new election.

The duties of the town school committees are to provide sufficient school-room for all the children in the town; to elect a sufficient number of teachers; to pay them their salaries regularly; to provide all needful apparatus for the schools; to keep the class-rooms and the teachers' houses in good repair, well whitewashed, and well warmed; to take care that all the children of the town attend school regularly; to inspect the schools at stated intervals; *to provide each school with a play-ground*; and to take care that the teachers exercise the children there every morning and afternoon. The funds required for the maintenance of the town schools, are provided from the treasury of the corporation.

The town councillors are responsible to the county magistrate and to the central government for the due performance of these several duties. If they neglect any of them, the teachers and inspectors complain to the higher authorities, who oblige them to conform immediately to the general law of the land.

Besides these municipal authorities, for the superintendence of the education of the whole town, it often happens, that each school in the town has its peculiar *schulvorstand*, corresponding to the village committees, which I have already described. These committees, where they do exist in the towns, elect their own teachers, and collect, in their several districts, the necessary school funds from the heads of families dwelling there; but if any one of the district school committees is not able to provide for the expenditure required to supply the wants of its district, the town school committee is obliged to come forward and assist it, from the general town funds. The latter committee is the general superintendent and assistant, but the former little district societies, where they exist, are the actual laborers. Difference of religion creates no greater difficulty in the towns than in the country parishes, since the Romanists, Protestants, and Jews can, if they prefer, manage their own schools separately, by means of the little school societies, and are never forced into any sort of connection, unless, where it is agreeable to themselves.

The Prussian government seems to have considered the education of the children of the towns, of even higher importance, than that of the children of the villages; and to have required the formation of these superior committees in the towns, as a sort of additional security, that all the districts of a town should be amply provided with every thing necessary for the careful education of their children.

These committees assemble every fortnight, and oftener when necessary, at the town halls; they have the power of inviting any number of the clergy and teachers of the towns to assist at their conferences, and to aid them with their experience and counsels.

In many parts of Prussia these central town committees are superseding the smaller district school societies, so that the funds of all the town schools, and the choice and induction of all the teachers rest entirely with the one central town school committee; and in the case of towns containing different religious sects, as far as I could gather from what I heard in Berlin—for on this point I could find no express regulation—the Protestant members of the town committee appoint the teachers of the Protestant schools, and the Romanist members the teachers of the Romanist schools.

But in every town every religious party is at liberty, if it pleases, to separate itself from the central town committee, and to form its own separate school committee, for the management of its own educational affairs. And where ever the union of the different religious parties occasions any strife and disputes, the small district committees are sure to be formed. Where these smaller committees do exist, they elect the teachers for the schools under their management.

Great advantages are, however, insured, when the management of all the schools in any town can be put under the direction of one committee, instead of

each being placed under the direction of its separate committee; or when all the Romanist schools can be put under the direction of one committee, and all the Protestant schools under the direction of another. For, in these cases, instead of creating a great number of *small* schools in different parts of the town, each containing only one or two classes, in which children of very different ages and very different degrees of proficiency must be necessarily mingled and taught together, to the manifest retarding of the progress of the more forward as well as of the more backward, several schools are generally combined, so as to form one large one, containing five boys' classes and five girls' classes. In these classes, the teachers are able to classify the children in such a manner, that one teacher may take the youngest and most deficient, another the more advanced, and so on. In this manner, as each teacher has a class of children, who have made about the same progress in their studies, he is enabled to concentrate his whole energies upon the instruction and education of *all* his scholars at the same time, and for the whole time they are in school, instead of being obliged to neglect one part of his class whilst he attends to another, which is necessarily the case, where children of different degrees of proficiency are assembled in one class-room, and which is always necessarily the cause of considerable noise and confusion, tending to distract the attention of both teachers and children.

But, besides the good classification, a further advantage, which results from this combination of schools, is the greater economy of the plan. When each school contains only two class-rooms, four times as many schools are required, as when each school contains eight rooms. And it is by no means true, that a school-building containing eight class-rooms costs as much as four school-buildings, each of which contains two class-rooms. Not only is a great expenditure saved, in the mere erection of the exterior walls and roofs of the buildings themselves, but a still greater saving is effected, in the purchase of land, as, instead of increasing the area on which the school is erected, it is always possible to increase its height.

Nothing can be more liberal, than the manner in which the Prussian towns have provided for their educational wants. The buildings are excellent, and are kept in most admirable order.

The town authorities are held responsible for all this; and, wherever I went, I found large, commodious, and beautifully clean school-rooms, furnished with all that the teachers could possibly require. Along the length of the rooms, parallel desks are ranged, facing the teacher's desk, which is raised on a small platform, so that he may see all his scholars. On either side of him are large blackboards, on which he illustrates the subjects of his lessons. On his right hand, there is generally a cabinet, for the reception of all the books and objects of instruction which belongs to the school; and all around, on the walls of the room, hang maps of different countries, and, generally, several of Germany, delineating, in a strong and clear manner, all the physical features of the different provinces and kingdoms which compose the "Fatherland."

The school-rooms are continually whitewashed; and should there be any neglect on the part of the town or village authorities to keep the school-buildings in proper order, or to provide all the necessary apparatus, the teachers have always the power of complaining to the inspectors, or to the country magistrates, who immediately compel the authorities to attend to these important duties.

Besides the schools, which are managed by school committees in the villages and towns, and which might be denominated public schools, there is another class, which would fall more properly under the designation of private schools.

If a private individual is desirous of establishing a school, as a means of earning his livelihood, or from a desire to offer to the poor of his neighborhood a better education, than they could obtain in the public schools, he is at liberty to do so, on the following conditions:—

1st, That the school be opened to public inspection, on the ground, that as the nation is directly interested in the moral education of its citizens, so it ought to be assured, that none of the children are subjected to immoral and corrupting influences, during the time when their minds are most susceptible of impressions of any kind, and most tenacious of them when received.

2dly, That no person be employed as teacher in such school, who has not ob-

tained a teacher's diploma, certifying his character and attainments to be such, as to fit him for the office of teacher.

3dly, That the school be supplied with a play-ground, and that the children be allowed to take exercise there in the middle of the morning and afternoon school hours.

4thly, That at least a certain fixed amount of instruction in reading, writing, arithmetic, geography, history, singing, and science be given in the school.

5thly, That a sufficient number of teachers be provided for the children ; and,

6thly, That the rooms are kept clean, well warmed, lighted and ventilated.

The profuse expenditure on all the material of education in the Prussian towns astonished me greatly, accustomed as I had been to the dame schools of England, and to the empty and repulsive interiors of many of our national school-rooms, with their bare floors and uncovered walls.

I took the greatest pains not to be deceived on this point ; and hearing that, owing to some municipal disputes, education had made less progress in Berlin than elsewhere, I requested Professor Hintze of Berlin, to direct me to the worst school in the city, and, having visited several of the more perfect ones, I started one morning to see what was considered a poor school in Prussia.

It was managed by a teacher, who had established a school for the poor at his own expense, as a private speculation, and unconnected with the town committees.

I found a good house containing *four* class-rooms, each of which was fitted up with parallel desks, and was under the direction of a teacher, who had been carefully educated, and had obtained his diploma.

I found a good, dry, and roomy play-ground attached to the school, a very agreeable and seemingly intelligent head master, who was owner of the school, and manager of one of the classes ; and the only cause of complaint I could discover, were, that the rooms were lower than the generality of school-rooms in Prussia, not measuring more than nine feet in height ; that there was a paucity of maps, blackboards, &c. ; that the desks were placed too closely together ; and that the walls were not so white and clean as in the town schools. But I could not help thinking, while walking through the rooms of this building, if these people could only see some of our dame, and some of our dirty and unfurnished national schools, what a palace would they not consider this to be !

The regulations which I have been describing, by means of which the enormous expenses of such a vast educational scheme are divided between all the different districts of the kingdom, and by means of which each parish is held responsible for the education of its children, have been followed by this splendid result—that, notwithstanding that most of their town schools contain five or six times as many class-rooms as those of our country, the Prussian people have established 23,646 schools, which, in 1844, were attended daily by 2,328,146 children, and were directed by 29,639 highly educated teachers, of whom nearly 28,000 were young professors, who had obtained diplomas and certificates of character at the normal colleges ! Now, could this magnificent result have been attained if the people, the clergy, and the government had not been at unity on this great question ? Could it have been attained, if there had been no organization of the parishes and towns, by which the duties of the different educational authorities were clearly and distinctly defined ? Could the government alone have borne the enormous expenses of establishing such a system ? Could the government have even afforded to carry it on ? And, above all, could private charity alone have effected so vast and splendid a result ? These are questions for my readers to answer for themselves.

The central committees of each town are required by law to establish, in addition to the primary institutions, which I have described, one or more *superior primary* schools, the number of which varies according to the population of the town. The education given in them is superior to that given in the primary schools themselves, but is inferior to that given in the *gymnasia*. It is of a more practical character than the latter, and is quite as good as the education of the children of our middle classes. These *superior primary* institutions are intended for all those children, who have passed through the primary schools, and whose parents wish them to receive a better education than that given in the latter

establishments, without their having to go through the classical course of the gymnasium.

The education given in these superior schools, as in all the public schools of Prussia, is gratuitous, and open to all classes of society. All the children of the small shopkeepers and artisans, many of the boys, who afterward enter the teachers' colleges, as well as many others, whose parents are to be found in the very humblest walks of life, and even children of the nobles, and of the richest classes of society, are to be found pursuing their studies there together, in the same class-rooms, and on the same benches. I have myself seen sons of counts, physicians, clergymen, merchants, shopkeepers, and poor laborers working together in one of these classes in Berlin.

Above these *superior* schools are the *real* schools and *gymnasias*, or colleges, where a *classical* and *very superior* course of education is pursued, and where the children of the more wealthy classes are instructed. They are under an entirely different direction; and all I have to do with them here, is to mention, that even these institutions are open gratuitously to all, who wish to avail themselves of the education which they offer. Even in these *classical* colleges children of poor laborers are sometimes to be found studying on the same benches on which sit the sons of the rich. It is very instructive to observe, that in Prussia, where one would imagine, according to the doctrines preached in England, that the government should, until the late revolution, have feared to advance the intelligence of the people, no one has seemed to have an idea, that too much instruction could be imparted to the children of the poor. On the contrary, every one has acted as if the public order and public morality depended entirely upon the people being able to think. A theoretically arbitrary government has been doing every thing in its power to stimulate and enable the people to educate their children as highly as possible, and has been for years telling them, that the prosperity and happiness of the country depend greatly on the training of the children; while here, in our free country, we still find people speaking and acting, as if they feared, that education was the inevitable harbinger of immorality and dissipation.

There are also in Prussia a great number of *endowed* schools, which derive their incomes from the rents of lands, or from the interest of money bequeathed to them by charitable individuals, or which have been founded and endowed at different times by the government. For each of these cases, there is an exception made in the operation of the municipal regulations, which I have described: neither of these classes of schools are directed by *Schulvorstände*, or by the town committees. The teachers for the *former* class are chosen by the trustees, appointed by the will of the donor; the county courts being enabled to annul the elections, if a bad selection is made. The trustees, however, are unable to appoint any person, as teacher, who has not obtained a diploma* of competency from the provincial committee, appointed to examine all candidates for the teachers' profession. In fact, no person can officiate as teacher, in any Prussian school, unless he has obtained such a diploma. This is the parents' guarantee, that he is a person, to whom they may safely intrust their children. The teachers of the class of schools, which have been founded and endowed by government, are appointed by the county courts. The town committees have, however, the surveillance and inspection of all these schools, and are obliged by law to assist them from the town funds, if their own do not suffice for their efficient maintenance. The municipal authorities are also obliged to assist all the parents, who are too poor to do it themselves, to purchase the books, slates, pencils, &c., required for the class instruction; and they are also obliged to provide decent clothing for such children, as are too poor, to obtain a dress sufficiently respectable for school attendance. And here, I can not help remarking, on the general appearance of the children throughout the provinces of Prussia, which I have visited. They were generally very clean, well dressed, polite, and easy in their manners, and very healthy and active in their appearance. In whatever town of Prussia the traveler finds himself, he may always satisfy himself on this point, if he will take the trouble to walk out into the streets, between twelve and two o'clock in the morn-

* For an account of diplomas, see page 193.

ing, i. e., between the hours of the morning and afternoon classes. In some towns, a stranger would imagine, either that the poor had no children, or that they never let them go out of doors. All the children he would see in the streets would appear to him to be those of respectable shopkeepers. This is a very satisfactory proof of the good effects of the school system, as cleanliness and neatness among the poor are invariable symptoms of a satisfactory moral and physical condition.

The law requires that every school, both in town and country, shall have an open space of ground adjacent to it, where the children may take a little exercise in the mornings and afternoons. This is a very important regulation, and is well worthy our imitation. The children, in Germany, are never detained more than an hour and a half in the school-room at one time, except when the weather is too bad, to allow of their taking exercise in the open air. Every hour and a half, throughout the day, they are taken into the play-ground for ten minutes' exercise by one of the teachers; the air of the school-room is then changed, and the children return refreshed to their work. In the towns this regulation insures other and greater advantages, as it keeps the children out of the filth and immorality of the streets. In most cases, our town-schools have no yard attached to them, so that, if the children do change the bad and noxious air of the school-room, it is only for the dirt and depravity of the streets, where they are brought under evil influences, much more powerful for injury, than those of the schools are for good.

In some provinces of Prussia, there are still some few of the old class of great landowners, between whom, in former days, the whole of Prussia was divided, until Stein and Hardenburg put the laws in force, which destroyed the old feudal system, and gave the peasants an interest in the soil. It is, therefore, an interesting question to examine, what the law requires these landlords to do for the education of the people on their estates. I have already mentioned, that the selection of the teacher is left to them, but that the government reserves the right of a veto upon their choice, in all cases where an injudicious election is made. The landlords are required to keep in good repair the schools upon their estates, and to pay the school-fees for the children of all the poor laborers living upon them, and not able to pay it themselves. They are also obliged to furnish the materials, required for the erection or repair of all necessary school-buildings; the fuel required for the school-rooms and teachers' houses through the winter; and, where the school is not endowed, the sum which is necessary for the teachers' salaries. The children of the landed proprietors themselves, often attend the village schools, and work at the same desks, with the sons and daughters of the poorest peasants—a proof of the excellent character of the education given in the primary schools, and of the high estimation, in which the teachers are generally held by all classes of society.

About eight or ten years since all the German schools were conducted on the Bell and Lancasterian methods, the children being left almost entirely in the hands of young and half-educated monitors, as in our own parochial schools at the present day. The results of this system were so unsatisfactory that they soon occasioned a powerful reaction in the contrary direction. The German governments, perceiving how grievously the mental education and mental development of the children were retarded by subjecting them to the imperfect care of half-educated monitors, prohibited all employment of monitors in the parochial schools. Hence, it became necessary to considerably increase the staff of teachers, as well as the expenditure required for their support. In the towns this has been productive of beneficial results, as the towns can always raise sufficient funds for the support of a sufficient number of teachers. I generally found that each of these schools throughout Germany had a staff of from six to twelve teachers attached to it, each of whom had attained the age of twenty years, had been specially educated in the classes of the primary, secondary, and normal schools, from his sixth to his twentieth year, and had obtained a diploma certifying his fitness for the profession to which he had devoted himself.

But in the village schools the results of this rejection of all monitorial assistance has been less satisfactory. The villages are not generally rich enough to support more than two teachers, and often not more than one, and this, too, in many cases, where there are 150 children who attend the school. In these cases,

therefore, monitors are greatly needed to assist in maintaining order among one part of the children, while the teacher is instructing another part, and to relieve the teacher from the more mechanical part of class instruction, so that he may apply his undivided attention to those branches of instructions, in which his superior skill, knowledge, and experience are most needed.

But the prejudices which the Germans have imbibed against the monotorial system, are, as yet, too strong to allow them to perceive the necessity of employing monitors in the village schools. Whenever I addressed a German teacher on this subject, he immediately answered, "Oh! we have had enough of your Lancasterian methods; depend upon it, we shall never try them again." It was very surprising to me to see, how universal and how strong this antipathy to monitors was throughout Germany; but it served to show me, how deep an interest all classes took in the prosperity of the schools, as it was evident that they only rejected this means of lessening the parochial outlay in the support of teachers, because they believed it to be essentially injurious to the sound mental progress of the children.

No doubt that the old monotorial system was deserving of all their maledictions; but it would well become the Prussian educational authorities to consider, whether the means between the old system and the present, such, viz., as the monotorial system pursued in Holland and France, is not the true state of things to which they ought to aspire. In these countries, the teachers train the most promising of their oldest and most advanced scholars as monitors. They give them instruction in the evenings when the day's work in the school-room is over. These monitors are paid by the parochial authorities just enough, to make it worth their while to remain at their posts as assistants to the schoolmasters until about seventeen years of age, after which time they are removed to the normal colleges to be trained as teachers, whilst other children take their places in the village schools. To these trained and paid monitors nothing is intrusted, but the mere mechanical parts of school teaching, *such as the elements of reading, writing, and arithmetic*. All the higher and more intellectual parts of school education, such as religious instruction, history, geography, and mental arithmetic, are conducted by the schoolmaster himself. But the principal service which the monitors render to the teachers is, in preserving order and silence in the school, and in watching over those classes, which are not for the time being receiving instruction from the schoolmaster. By this means, one able master, with the aid of two intelligent monitors, may conduct a school of 100 children; whenever the number, however, exceeds 100, there should in all cases be, at the least, two superior teachers.

As I have already said, the want of monitors is felt most in the village schools; for the town schools are conducted in a totally different manner. In a town a greater number of children are found assembled together, and greater funds are always found at the disposal of the school authorities, who, it will be remembered, are elected by the people. In each of the Prussian towns, several great school-houses are generally built, each containing from four to sixteen class-rooms. The number does not, I believe, generally exceed eight in one school-house, and some have not more, but hardly any fewer than four. In Germany, except in the poorest villages, different classes are never instructed in the same room. Even in the villages, there are generally two or three class-rooms in the village school-house, for each of which a separate teacher is maintained. This plan of teaching the different classes in different rooms, adds incalculably to the efficiency of the education given. In each room, only one voice is heard at a time—the voice of the teacher or one of the children. The attention of the children is not disturbed or diverted from the teacher by what is going on in another class. Each room is perfectly quiet. The teacher can be heard distinctly, and can hear every noise in his class. Besides all this, for equal numbers of children four or five times as many teachers are employed in Germany as in England. Each child receives, therefore, four or five times as much assistance and attention from a learned man as a child does in England. The individual progress, therefore, of the children in the German schools (and the same may be said of the Swiss schools,) is very much greater than that of the English children. Over each school-house one head teacher is appointed, who is an elderly and experienced man, and who himself takes the management of the highest class. Under him are appointed a number of younger teachers, corresponding to the number of class-rooms in the school-

house. These younger masters board with the head teacher in his house, which is generally constructed large enough to afford lodgings for the staff of masters required for all the classes. If the class-rooms do not exceed four, the boys and girls are mixed together in the different rooms, and are divided into four classes, according to their proficiency. If, however, the school contains more than four class-rooms, then the girls and boys are separated into two distinct divisions, each of which is divided into three or four classes according to the proficiency of the children. In the town schools, therefore, it is much easier to dispense with monitors, as no teacher is perplexed with having to direct different classes in the same room. Each teacher has only to instruct a small number of children of about the same proficiency in the same subject, at one time and in a separate room. He can, therefore, at all moments engage all his children in the same occupations, keep them all under his constant inspection, and direct their operations much better than where these operations themselves are necessarily of three or four different kinds at the same time. But even in such case, the teachers require the assistance of monitors, in the writing, drawing, and ciphering exercises; or else, as I have often observed, when the teacher's attention is withdrawn from the class, or when he is attending to some individual pupil in one part of the school, the juvenile spirit is sure to begin to effervesce in another, and to produce noise, disorder, and interruption. This want of assistance for the principal teachers was almost the only fault I could find with the Prussian schools.

The school-buildings were generally excellent, and often handsome; the class-rooms numerous, lofty, capacious, and *always* clean; for the inspectors take great care that the parochial authorities do not neglect the whitewashing and repairs. The scholars themselves were always exquisitely clean. The rooms were constantly whitewashed and scoured. The law obliges the school committees to do this. If any neglect in these particulars is evident, the inspectors and county magistrates are empowered and required to act for the parochial committee, and to raise the funds necessary for the purpose by a parochial rate levied upon the householders. But from the beautiful neatness and cleanliness and from the excellent repair of the school-rooms which I saw in different provinces of Prussia and Germany, it appeared to me, that the people fully understood and appreciated the importance and utility of these regulations.

The class-rooms were always well fitted up with parallel desks and forms, and almost always with excellent maps of Germany, on which all the leading physical characteristics of the country were delineated in a strong and forcible manner, and on a large scale; and also with smaller but excellent maps of other parts of the world.

At one end of each class-room is the teacher's desk, raised a little above the others. Behind, and on each side of him hang great blackboards, fastened to the wall by moveable hinges. On these he writes copies of the writing exercises, and draws all his figures, &c., for the illustration of his lessons: and on all these also each child is called upon in turn to explain arithmetical operations, or to fill up or draw the outlines of a map of some part of Europe, or of one of the principal countries of the world. The space between the teacher's desk and the other end of the room is filled with parallel rows of desks and forms, at which the children work; for the Prussians are too anxious to make the children interested in their school duties, to think of making education more disagreeable to them than it necessarily is, by forcing them to stand through nearly the whole of their lessons, as they do in many of our national schools to this day. Each school has also a yard, where the children take exercise in the middle of the morning and afternoon school hours, to refresh themselves, and to awaken their faculties, while the windows of the class-rooms are thrown open, and the air of the rooms is thoroughly purified.

Some persons seem to imagine that, if a school-room is built and children attend it, the results must needs be good; but it behooves them to examine whether they have left any influence at work upon the children's minds, stronger than the influence for good which the school affords. If it is so, it seems a little sanguine, to say the least of it, to hope for happy results. The whole system of things in Germany is so entirely different to that in England, that any one who attempts to describe it to Englishmen must necessarily appear to exaggerate. I

can only say, let doubters go and inspect for themselves, and I am convinced they will own, that I have not said nearly so much as I might have done, in favor of the wonderful efforts the people and the governments are making to advance the great cause of popular instruction.

Each child buys its own books and slate. Those children, however, who are too poor to pay the small school-fee, and who are consequently sent to school at the expense of the town or parish in which they dwell, are provided with books, &c., by the town or parochial authorities. The children generally carry their books home with them; and every morning at a quarter to eight o'clock, a traveler may see the streets of a German town or village filled with boys and girls, neatly dressed and very clean, hurrying to school; each of the boys carrying his school-books in a small goat-skin knapsack on his back, and each of the girls carrying hers in a small bag, which she holds in her hand. The cleanliness and neatness of dress which I generally observed among the children very much surprised me, and always served to convince me how the educational regulations were tending to civilize and elevate the tastes of the lower classes throughout Germany. At first, I was often disposed to doubt the veracity of my companions, when they assured me that the children I saw were the sons and daughters of poor laborers.

The very way in which children of different ranks of society are to be found mingled in the same school, serves to show how superior the civilization of the lower orders in Germany is to that of the English peasants. With us it would be impossible to associate, in the same school, the children of peasants with those of even the lowest of our middle classes. But in Germany, I *constantly* found the children of the highest and of the lowest ranks sitting at the same desk, and in almost every school I saw the children of the lowest and of the middle classes mingled together.

In Berlin, one of the teachers, on my asking him whose sons the boys at one of his forms were, requested them to tell me in what occupations their fathers were engaged. From these boys I learned, that one was the son of a clergyman, another of a physician; that others were the sons of small shopkeepers, and others the sons of errand-men and porters. Now, were not the children of the errand-men and porters very much more civilized, polished, and, if I may use that much abused word, more *gentlemanly* than the same class of children in England, such an association would be totally impossible. And yet this to us incredible state of things, exists with infinitely less discontentment and social disturbance than we find among our laboring classes in England.

But it must not be imagined that the educational system is in a stationary state, that the people and the government are resting upon their oars, or that they now think that they have done enough, and that they can let the stream bear them on without further exertion. Far, far otherwise; on every hand extensive improvements are going on, as if they had only commenced last year, to take any interest in the question, and as if they were only now beginning the work, like fresh laborers. Here I found a new and handsome school-house just finished; there, another one in building; and here, again, old houses being altered and enlarged. In one town I found them preparing a great building for a normal college; in another, I found them preparing to remove one of these noble institutions to a more commodious and larger set of buildings; and wherever I traveled, I found the authorities laboring to establish infant schools, as well as to perfect the educational institutions of their several localities. It sometimes appeared to me as if all the resources of the government must be devoted to this object; whereas my readers must recollect that, except in the cases of the normal colleges, this great work is effected by the people themselves; and that the enormous expenditure, by being divided between all the different towns and parishes in the kingdom, is scarcely felt. Since 1816, every year has witnessed a further progress: old schools have been pulled down, new ones have been erected; the old and less efficient teachers have gradually died off, and their places have been supplied by excellently trained masters who now direct the schools; the young men who are about to enter holy orders have been obliged to study pedagogy, in order to fit themselves to be inspectors; the regulations respecting the factory children, which I have given in an earlier part of this work, have been put in force;

the *minimum* of the teachers' salaries has been considerably raised, and the system of teachers' conferences has been perfected, and put into operation.

I shall now show what restrictions exist on the free choice of books by the teachers. The Prussian government has here had two evils to guard against: one of these was the retarding of the gradual reform of school-books, which reform will always take place, when the teachers themselves are learned men, when they thoroughly understand the theory and practice of pedagogy, and when they are not fettered by unwise restrictions; and the other was, the admission into the practical schools, of books of an irreligious or immoral tendency. These two evils are guarded against in the following manner:

No book can be used in any school of the provinces, until the authorities composing the provincial *Schulcollegium*, which has the direction of the higher schools and gymnasia, as well as of the normal colleges of the province, have licensed it, or sanctioned its admission. Any book which has been so sanctioned, can be employed by any schoolmaster of the province in which it was licensed. There are, in every province, a great number of works on religion, history, science, &c., which have been thus licensed, and from which the teachers are at liberty to choose. But, if a schoolmaster writes a book, which he deems better qualified for school use than those already published, or if he desires to employ a work written by some one else and which is not licensed, he forwards a copy of it, through the inspector, to the provincial authorities, in order to obtain their consent, which is only refused, where the book is positively imperfect or unfit for the young. In the schools, which I personally inspected, I generally found the school-books very excellent, and written either by teachers, or by some person engaged in the educational profession. Coming as they do from men of very long experience in the practice of pedagogy, they are generally well adapted to answer the wants, which the writers themselves have experienced, in the exercise of their professional duties. With the above restrictions, the choice of books is left entirely to the schoolmasters.

The character of the instruction given in all the German schools is suggestive; the teachers labor to teach the children to educate themselves. There is little or no "cram" about it, if I may use an old university phrase. In most of the best primary schools of England, the teacher still contents himself with the old cramming system; that is, he tries to crowd the memories of his scholars with facts, and continually exercises their memories, without ever attempting to develop and strengthen any of their other intellectual faculties. Now, we know but too well, that a man may have the most retentive memory, and the best stored mind, and yet remain as incapable of reasoning, as improvident, and as irrational as ever. He may be full of facts; but may be as unable to make any use of them, or to turn them to any good account, as one bereft of the faculties of speech, sight, and hearing. If a man can not use his reasoning powers, he is much better without knowledge; to impart facts to a fool, is like intrusting fire to a madman. The great *desideratum* for the poor, as well as for every one else in this world, is a capability of using the reasoning faculties; not that this will always save a man from false ideas and from irrational conduct, but that a man who possesses it will be *more likely* than any other, to take a right view of his position in life, his duties, and his advantages, and will be more likely to understand the best means of improving them.

Next, then, to implanting good principles in the child, the first object of every system of instruction should be, to teach it how to use the high and important faculties, which Providence has given it, as the means by which to insure its temporal happiness and continued self-improvement. Facts are necessary, but facts alone are not enough: to cram a child's mind with facts, without constantly exercising its reflection and its reason, is like feeding it with quantities of rich viands, and denying it all bodily exercise.

The German teachers are, therefore, taught that their duty is to awaken the intelligence of their children, far more than to fill their heads with facts, which they would not know how to use, unless their reasoning powers had been first cultivated. The schoolmasters do not therefore hurry over many facts in one lesson; but endeavor to make them think and reason about the subject of instruction.

The method of instruction is left to the unfettered choice of the teachers, so

that it is impossible to speak with certainty of the methods pursued in the majority of the schools; but in all that I visited, I invariably found the simultaneous method pursued. By this the scholars are divided into different classes, and each class is instructed separately. This is not done on the old shouting plan, where one or two clever boys give the answer, and all the others follow in the same breath, and often without having known what the question was. Not so: the class under instruction first reads a section or chapter from the school-book, relating to the subject of instruction; the teacher then endeavors to illustrate what the children have been reading, to make them clearly understand it, to assure himself that they do *understand* it, and to impress it more clearly and firmly upon their memories. All this he does by suggestive questions, which he himself does not answer, until he has first tried whether any of the children can answer them for themselves. When a question is put, all the children, who are prepared to answer it, are told to hold up their hands, and the teacher then selects one child, who stands up and gives what he conceives to be the answer; if he is wrong, another is selected to correct him, and so on in like manner; but until the teacher has called upon some one to answer, not a single word is allowed to be spoken by any member of the class. If no one can answer the question, the teacher, before answering it for the children, excites their curiosity about it by questions and hints, and stories illustrating or partially explaining the subject under discussion; and when he has succeeded in interesting the whole class in the answer, he then gives it, but not before. By these means, the reflective powers of the children are exercised and trained; they are taught to think, to inquire and to reason, and their minds acquire strength and activity. During every lesson the teacher stands, and the children sit before him at their desks. The most perfect silence is observed, except when broken by the answer of the scholar fixed on to reply, or by a question made by a scholar seeking explanation, or by a laugh at some amusing story or joke of the teacher. No lesson is continued long. The subjects of instructions are changed about three times in every two hours; and, at the end of every two hours, the children of all the different classes meet in the play-ground, under the charge of one of the teachers, to get some fresh air and a little exercise.

The great object of all this is to make the lessons as interesting and attractive as possible to the children, to keep up their attention, and to gradually develop all the powers of their minds.

This system enables the German teachers to watch and tend the progress of each individual child. No child can screen idleness or ignorance, behind the general shout of the class. The teacher sees instantly, if a scholar fails often to hold up his hand; and as he questions those, who do hold up their hands, by turns, he soon finds out if a child is really attending or not.

One thing which greatly surprised me in all the German and Dutch schools was, the great interest the children evidently took in the subject of instruction. This is to be explained entirely by the manner, in which they are treated and instructed by the teachers. The teachers address them as intelligent, rational beings, and in a conversational manner, as if they expected them to listen and to understand. The teachers further excite their interest by showing them, in all their lessons, the practical use of the knowledge they are acquiring. Constant references are made to the different pursuits, in which the children will be engaged after leaving school; to the commerce of the country, and the way in which it is supplied with the various articles of foreign produce which it requires; to the duties of citizens; to the history of the country; to its produce, its physical characteristics, and its political relations; to farming, in its various branches; to the great inventions and vast undertakings of the day; to the wonders of foreign countries; and, in fact, to all the newspaper topics of the day.

I have myself been obliged to answer questions in the German and Dutch schools about the navy of England, the wealth of England, our metropolis, our colonies, and the miseries of Ireland.

Instruction, or amusement which will excite the scholars to seek instruction, is sought from all the subjects and allusions started by the lesson. The children are made to see the end of instruction and the object of schools in every lesson which is given them. The teachers encourage them by words and looks of approval.

A few words, such as "that's right, Charles," "that's a very good answer," "you have explained it very well," "well done indeed," and such like explanations, stimulate the children as if they were at a game. Added to this, that the teachers are so admirably drilled in the art of teaching, that they perfectly understand how to make every thing clear and comprehensible to the least intelligent scholar of the class, while they are so well educated, that they are able to illustrate each lesson by a hundred interesting stories or descriptions.

The subjects of instruction in the primary schools vary in the different classes. In those for the younger children, who have only just entered the school, they are confined to Scripture history, reading, writing, arithmetic, and singing; but, in the classes for the elder children, not only are higher and more advanced exercises in the above subjects given, but the scholars learn also German history, geography, drawing, and mental arithmetic. In this last subject of instruction, I sometimes found astonishing progress made. Besides the above lessons which the schoolmasters are obliged by law to teach in all schools, the children learn to recite the most beautiful of the Psalms and the finest passages of Scripture, as well as the most celebrated national melodies. In the higher elementary schools, or, as they are called, the higher burgher schools, which are open to all the children who like to enter them after leaving the elementary schools, and which are attended by the sons of small shopkeepers and of laborers also, the course of education is much higher, embracing not only a continued exercise in the different subjects of instruction which I have enumerated, but in addition to these, geometry, universal history, and the French language. No child is *obliged* to attend these schools; but all are admitted, who wish to continue their education there after leaving the primary schools. These schools are only to be found in towns; but each town is *obliged* by law to support *at least* one of them. They are generally very well attended by the children of small shopkeepers, and contain also many children from the poorest ranks of society.

The method of teaching these subjects generally, has already been given under the head of Primary Schools in Germany, in the language of Prof. Stowe and Mr. Mann. We will now give from Prof. Bache, and other authorities, the organization, study table, and methods of instruction of several schools of different grades.

BURGHER SCHOOL AT HALLE.

The series of schools, which now cluster about the Orphan-house of Halle, are called after the name of its founder, the Franke Foundations, and embraces the whole range of public instruction. It begins with the common or elementary schools, in which the instruction terminates at the age of twelve or fourteen years; contains a "higher" or middle school, called, also, a "burgher school," the courses of which end at fourteen or sixteen years, and where the pupil is prepared to enter life as a tradesman. Also, a "real school," its courses ending at sixteen or eighteen, and intended to prepare for the higher mechanical occupations; and a classical school, or "gymnasium," retaining its pupils until eighteen or nineteen years of age, and fitting them for admission to the university.

The attendance on these schools varies from year to year, being made up of pupils from other parts of Prussia, as well as from Halle. The attendance, at the date of Dr. Bache's visit, was as follows:

Free School for boys	350, in four classes.
" " " girls	350, " "
Burger School for boys	600, twelve "
" " " girls	400, eight "
Superior " "	100, six "
Real " " boys	150, five "
Gymnasium or grammar school	300, six "
Pedagogium	80, five "
Total,	2330

In the establishments for education there were at the same time, in the orphan house, 114 boys and 16 girls, in the boarding school 230 boys, and in the pedagogium 80, total 436.

The school which the boys of the orphan-house in general attend, is that called the "burger" or citizens' school, sometimes also called middle school. Its objects are thus defined, first, "so to train the sons of citizens by instruction in useful science, that, at the age of fourteen years, they may be in a condition to begin a handicraft, or other trade;" second, "to prepare the pupils for the lower classes of a gymnasium, or for the classes of a real school, to accomplish which latter purposes Latin and French are taught."

The lower classes are, in fact, those of an elementary school, and the boys who leave the orphan-house at fourteen, are instructed exclusively in this establishment. The few who are selected to remain after fourteen go to the Latin school; Latin and French both are, however, studied in the upper classes of the burger school, and the aptitude of the orphan pupils for language, is thus put to the test. The school is divided into four classes in reference to the progress of the pupils, and each is subdivided for convenience, with a teacher to every subdivision. Thus the same teacher gives instruction in all the subjects of study, to a class of boys numbering, on the average, about fifty.

The branches taught are: Exercises of speech and thought. Bible history. Religious instruction. Mental and written arithmetic. Elements of geography. (Knowledge of home.) Reading and writing taught together. Reading. Calligraphy. Stories from history. German grammar. Composition. Geography of Germany. German history. French grammar. General history. Higher arithmetic. Elements of geometry. Bible lessons. Christian morals. Christian doctrines. Elements of Latin.

There are teachers of singing and drawing, besides the regular class teachers. The pupils are examined privately once every six months, and publicly at Easter, when the change of classes takes place.

The exercises of speech and thought, the first subject on the above list, constitute the breaking-in, as it were, of the child, and being at the very threshold of instruction, try the teacher's skill more than many a learned branch. He must teach the pupil to think, taking care that his thoughts are expressed in appropriate words. Pestalozzi, who first practiced upon this idea, drew the child's attention to the human frame, as the subject of contemplation; others have preferred to bring him in contact with nature, in general, by making simple natural phenomena the basis of the inductive lessons; others, not surrounded by nature, made man and his dwelling their theme; others introduce simple lessons on objects of nature and art, which can readily be presented to the child for his examination, and on which, as a basis, to rear the superstructure of natural history, physics, and technology, in his advanced course. All these are good in their way, but such as I saw tried seemed to depend for their efficacy upon the circumstances of the school, and to be better or worse as the child found means to apply his newly acquired powers of perception, to observe for himself. Of all the plans, when the school is rightly situated for it, a reference to nature produces the best training of the heart, as well as the mind of the child. It would be impossible to present, here, even extracts from the numerous works which contain the methods employed in these exercises.

The Bible history and religious instruction next referred to, are principally given orally, the morals of the Bible and the events which it describes, being put into such a form that when the sacred book itself, at a later day, comes into the

child's hands, he is prepared to read it with proper interest. This plan is diametrically opposed to that which employs it as the beginner's horn-book, and from which, I feel bound to say, I have never seen any good result.

I can not enter into details in regard to all the branches, but must be satisfied with noticing two which are here taught particularly well, namely, reading and writing, and geography.

The reading and writing are taught at the same time, according to the method of Harnisch, developed by Scholtz. The child makes a letter on his slate, after a copy upon the blackboard, and is taught to name it. The German language having a fixed sound for each letter, when the sound of the letter has been learned, not its common arbitrary name, but the sound which it has in composition, the pupil has made some progress toward knowing how to form combinations, which is the next step, the vowels being placed alternately before and after the consonant. These combinations are first written on the slate, and then pronounced. The next exercise consists in placing a vowel between two consonants, which is followed by other simple combinations. These being classified by careful study, the child is soon able to compose simple sentences, in which his ideas are developed, so that the mechanical operation of writing and of reading is interspersed with intellectual exercise. In this the talent of the teacher is strikingly exhibited, and a prescribed routine of instruction would fail in its object. The written letters being once learned, the next step is with the printed, and a reading book is not introduced until the child has felt the necessity of it in his further progress. It is then a relief, and not a task.

I saw, here, a class which had been under instruction for only nine months, the pupils of which wrote short sentences very legibly in a hand of medium size, spelled them correctly, and read them distinctly.

This method of learning to read is, in a great degree, inapplicable to our language, in which the vowel sounds are so numerous; but the union of reading and writing may have its advantages. The characters of the ordinary German writing are composed of very different forms from those of our round hand, and which are more simple, and, in general, angular; hence no considerable dexterity of hand is required to trace the letters, and only a brief practice in elementary forms is required. I saw classes of children of ten and eleven years old, at Zurich, who, by being constantly practiced in this method from their earliest instruction, had acquired a very striking facility of expressing their ideas clearly and correctly in writing. The method produces a facility of composition, in writing, as that of Jacotot does a fluency in speaking. The orphans entering at ten years of age, do not, in general, pass through this class.

The geographical instruction, founded upon the method of Pestalozzi, proceeds on strictly inductive principles, and is an example of how much may be done by making the pupil proceed from the known to the unknown. The following was the course of a recitation which I attended on the subject. The teacher drew, first, from the knowledge of the pupils of different objects or bodies, a definition of the term body, then led them to define extension, dimensions, &c., and thus furnished them ideas of space. Sunrise and sunset were used for establishing the position of the cardinal points, and that of the class-room was determined in reference to these. Then commencing with home, with a map of the city of Halle, they gave an account of its localities, and the history connected with them. Widening hence in circles, the natural and political features of the surrounding district were described, always indicating the real directions of places, &c. The pupil thus grasps every step of geographical knowledge; begins with his own house, rambles through his own town, makes excursions in its neighborhood, sets out on his travels through his fatherland, visits foreign parts, sees what is worth seeing in the natural and artificial state of the country, finally learns the relation of its parts and of the whole to other worlds, and thus the interest is kept up from the first to the last. The reverse method I compared with this over and over again; some teachers have found this tedious, others have mixed the two systems, but, judging by the comparative results, I give this method greatly the preference over others, as not only teaching geography, and connecting history with it, but enlarging the general intelligence, while it improves the memory. In the upper classes, the pupils use maps without names, and draw maps on the board, marking

localities, &c. At other times, the places are indicated by one pupil, and named by another, with other variations of exercise. In the lower classes, the responses were frequently repeated by the whole class, and in the upper classes the instruction was more addressed to individuals. With all the inherent merits of this method, I have seen it wholly marred by a dull teacher.

The inductive method applied to any branch of knowledge requires time, patience, and some skill on the part of the teacher. The routine method, or positive teaching, is much easier to the instructor. The former at every step unfolds the mind, the latter frequently overburthens it. If the positive knowledge acquired by the first is entirely lost, the habit of thinking remains, while, if acquired by the second, there is nothing left unless some improvement of memory, and general development of the reasoning powers.

A pupil who has properly improved the advantages of this school, will have acquired a reasonable knowledge of the German language, of reading, writing, and arithmetic, of geography and general history, will be familiar with the history, morals, and doctrines of the Bible, and his general mental and moral development will be such as befits his age. If especially industrious or apt, he will have had an opportunity of beginning Latin and French, and if he prove to have a facility in language, will be transferred to the Latin school. It would seem that, if he have a peculiar disposition for mathematical studies, he should be sent to the real school to prepare him for one of the higher mechanical callings. If he should have had this advantage, on reaching seventeen years of age, he would have added to his stock of knowledge:

Further acquaintance with German and French. Latin and English if required, though not regularly taught. History and geography. Natural history. Mathematics. Practical arithmetic. Physics and chemistry. Religion. Improved writing, and drawing.

The Latin school, into which the more intelligent pupil now actually enters, conforms to the plan of the Prussian gymnasium. This gymnasium has six classes, divided each into two parts, and forming a connected series of instruction, one part being six months behind the other, except that the pupils of the two parts are sometimes assembled to listen to the same lecture.

The branches studied are: Religious instruction, Latin, Greek, French, mathematics, elements of physics, history, psychology, and logic. Poetry and rhetoric, and Hebrew or English, as the student may desire.

MILITARY ORPHAN-HOUSE AT ANNABURG.

The following plan of instruction was prepared by Dr. Harnisch, one of the most distinguished teachers of Prussia:

The course is divided into two parts, one an elementary course, consisting of religious instruction, arithmetic, the mother tongue, singing, writing, and exercises of induction, taught in four classes, between the ages of ten and fourteen. The other, a higher course, taught in three classes, and between the fifteenth and eighteenth years of age of the pupils. In order to rise to the place of a non-commissioned officer, the pupil must have gone through at least the lowest of the classes of the higher school. The subjects of instruction in this school are: religious instruction, arithmetic, singing, the German language, calligraphy, geography and history, algebra, geometry, trigonometry, and drawing.

The courses in the different branches are arranged as follows:

First. Religious Instruction.

LOWER SCHOOL.

Class VII. Bible stories, psalms and hymns, appropriate to the season. Four hours per week.

Class VI. Histories from the Old and New Testament, portions of the history of the Christian church, catechism. Four hours per week.

Class V. Reading and explanation of the Bible, and of its arrangement. The gospel and

historical works are selected, and the history is connected with the geography of the Holy Land. Catechism. Five hours.

Class IV. Doctrines of the Lutheran church, taught by Luther's catechism. Five hours.

UPPER SCHOOL.

Class III. Moral instruction, duties to God and man. Three hours.

Class II. Reading the Bible with comments, the pupils making abstracts. Three hours.

Class I. (Two years.) The first year a repetition of Luther's catechism. The second, a history of the Christian dispensation. Three hours.

Every class commits verses from the Bible to memory.

Second. *Arithmetic.* Mental and written arithmetic are taught together, that the readiness afforded by the one, and the accuracy of the other, may both be cultivated.

LOWER SCHOOL.

Class VII. The four ground rules, with three places of figures mentally. Application to questions in weights and measures. Three hours.

Class VI. The same rules extended. Three hours.

Class V. Fractions, with applications to weights and measures. Three hours.

Class IV. Proportions. Three hours.

UPPER SCHOOL.

Class III. The applications of proportions to questions of weight, strength, value, time, and general quantity. Two hours.

Class II. Exercises in practical algebra. Two hours.

Class I. Review of the course. First year, practical operations. Second, theory of arithmetical processes. Two hours.

THIRD. *Vocal Music.*

LOWER SCHOOL.

Classes VII & VI. Practice of songs, adapted to youth of a cheerful, serious, military, or religious cast, with one part. Two hours.

Classes V & IV. Choral and other songs, with the different parts. Elements of music. Two hours.

UPPER SCHOOL.

Classes III, II, & I. More difficult choral pieces. Theoretical instruction continued. One hour. There is, besides, instruction given to a select choir, intended to conduct the vocal exercises of the church.

FOURTH. *Reading.* In the lower classes, a readiness in reading, and in the higher, the style of reading, is attended to especially. Pieces learned previously, by heart, are recited.

LOWER SCHOOL.

Class VII. A good pronunciation, and some facility in reading. Six hours.

Class VI. Readiness in reading, and repeating the substance of what has been read. Familiar illustrations. Five hours.

Class V. Reading some work in reference to knowledge useful in common life. Four hours.

Class IV. Reading, with attention to emphasis. Four hours.

UPPER SCHOOL.

Class III. Reading the Bible and sacred melodies, with the view to correct reading in this kind of composition. Two hours.

Class II. Reading various selected works, in and out of the class.

Class I. Reading continued, and recitations from works previously read.

FIFTH. *Orthography and Writing.* These may be taught together in the same way as mental and written arithmetic; the teacher is, however, at liberty to follow his own method.

LOWER SCHOOL.

Class VII. Copying on slates from the blackboard. Four hours.

Class VI. Copying on paper, from the board, and from books. Four hours.

Class V. Writing from copy-slips, from books, or from dictation. (Practice in spelling and writing.) Four hours.

Class IV. Similar exercises continued. Four hours.

UPPER SCHOOL.

Class III. Copying useful papers, such as registers, accounts, contracts, &c. Two hours.

Class II. Calligraphy, with Roman as well as German letters; practice in orthography; reading of letters and documents in various handwritings. Two hours.

Class I. Copying papers relating to the management of the institution, as a practical introduction to business. One hour.

SIXTH. *Useful knowledge taught by induction*

LOWER SCHOOL.

Class VII. The pupils give their ideas, verbally, of surrounding objects of the most simple kind, of the commonest productions of nature and art. Conversations relating to them. Drawing the most simple mathematical figures on the slates. Three hours.

Class VI. Descriptions of animals and plants, the former in the winter, the latter in the summer term. Written remarks on these, serving to afford exercise in the formation of phrases and in orthography. Four hours.

Class V. The most essential parts of physics and natural history, the pupils taking notes of the lessons. Four hours.

Class IV. Compositions on various subjects. Letters relating to civil and military affairs. Four hours.

UPPER SCHOOL.

Class III. History of Prussia, and drawing of maps. Four hours.

Class II. General geography, particularly that of Europe. Passing from physical to political geography. Civil geography in connection with the former. Five hours.

Class I. Universal history. One year is devoted to ancient and one to modern history. Selections are made of the more important parts of history. Five hours.

The remaining studies only belong to the higher school.

SEVENTH. German grammar and style.

UPPER SCHOOL.

Class III. Logical and grammatical instruction of the German language taught.

Class II. Idiom of the language. Compositions on military subjects, with especial reference to correctness of grammar.

Class I. Acquaintance with the best writers. Exercises of composition on subjects taken from history.

EIGHTH. Geometry.

UPPER SCHOOL.

Class III. Teaching the names and properties of mathematical figures by induction, in connection with drawing.

Class II. Equations, with application to problems of common life.

Class I. Elements of trigonometry.

NINTH. Drawing.

UPPER SCHOOL.

Class III. Drawings from common objects, varying the positions, &c.

Class II. Copying flowers, or drawings of implements.

Class I. Architectural drawing with instruments, drawings of furniture, &c.

Dr. Bache makes the following remarks on the above plan:

I have allowed myself to present this extended programme, because it conveys, in as brief a compass as possible, excellent ideas of the succession of courses in an elementary school, and in a technical or trade school, for such the higher school must be considered. It should be remembered that the main purpose is the preparation of youth for the military service, and hence that the wants of the service are especially consulted. Another fact must be remembered, namely, that this is a Lutheran school, and therefore the religious instruction is adapted to the particular views of that church. The course of morals of the third class, I must say, however, seems to me out of its place, for although our duties to God and our neighbor are of course best learned from his Word, yet their inculcation by precept and example can not commence too early.

In the arithmetical course, the union of mental and written arithmetic is absolutely essential. The gradation appears to me good, and the application to questions of common life gives a zest to such studies, attainable in no other way. The theory of arithmetical processes, however, should accompany or follow more nearly their practical acquisition. Indeed, if they are taught as they ought to be, by induction, the theory goes with the practice.

If the youth at Annaburg take the same pleasure in the exercises of song, from the elements to the completion of the musical course, as those of the school* actually superintended by the author of this project, the success will be complete.

The connection of orthography and writing, especially if combined with early reading, is natural.

The exercises of induction, which in the lower classes are well drawn out, deviate from the appropriate track in the fourth class, and in the geographical and historical courses do not return to it. The system in both these branches is rather synthetical than inductive. There is a great temptation to break away from this method, into that of giving positive instruction, from the apparently greater rapidity of progress of the pupil; some teachers have abandoned it altogether, as too slow, though ultimately to their cost, as appeared to me in cases where I had an opportunity of comparing the results.

The writing is preceded by an introductory course of drawing, which might

* Seminary for Teachers at Weismesfeld.

with excellent effect be so extended as to branch out into complete courses of drawing and writing.

As this plan results from an extended experience, the number of hours of instruction, per week, necessary to secure the results, is an important datum, and as such I have retained it, whenever it was inserted in the original programme.

PUBLIC SCHOOLS OF BERLIN.

The capital of Prussia is well supplied with public educational institutions of various grades, from the Krippen, (or mere nurseries for children whose parents are obliged to labor away from their homes for their daily support) and Kleinkinderbewahranstalten, (or institutions for the care of children between two and four, resembling infant schools, but not doing much in mere instruction,) to the university, with its departments of law, theology, medicine, and philosophy, and schools of preparation for gardening, agriculture, commerce, trades, and the mechanic, and fine arts. Of these, we have selected for description a few which belong to the department of primary education as understood in this country, as well as two which rank abroad with secondary schools, but correspond to the grade of public high schools, as now organized in our large cities, as parts of their systems of public instruction.

ELEMENTARY SCHOOLS.

The elementary schools of Berlin are not organized as a part of a system of public instruction; they are partly private and partly public; some of them are intended exclusively for the poor, and are supported entirely by the city, and others are private establishments, in which the tuition of such poor children as attend, are paid by the city. In the burgher, or higher class of primary schools, as well as in the gymnasia and real schools, there are classes which belong properly to the elementary schools. In 1827, Mr. Reichelen, member of the school council, devised a plan of organization for a class of schools for poor children in Berlin, differing in some respects from that adopted in the kingdom at large. From the document embodying this plan we make a few extracts for the sake of explaining the organization of the schools, and illustrating the difference between these schools for the poor and our common schools.

Although, in the middle class, the co-operation of the parents and the influence of families may be depended on, the contrary holds with children of the lowest, whom it is often necessary to withdraw as much as possible from the baleful influence of the bad example of their parents. In the case of these children, the exertions of the school are wholly unassisted.

In the new organization, the two sexes should be separated; which will not increase the expense, provided the schools be so proportioned, as that one complete school shall contain two divisions having seventy-five each, one for boys and one for girls; these two divisions forming but one parish school for three hundred children, in one building.

The special character of the instruction proper for poor children, is defined in these two words, *prayer and work*.

The subjects of instruction for the first class should be :

1. For religion : the Bible, catechism, the positive truths of Christianity.
2. For the German language : language considered as the expression of thought ; the most general rules of grammar, clear and intelligible pronunciation, reading and orthography.

3. Writing.

4. Arithmetic, to fractions and the rule-of-three, inclusive.

5. Singing, and particularly exercises in sacred choral music.

For the second class of boys, the most general elements of the natural sciences, of geography, and national history, as well as the elements of geometry and linear drawing should be added.

For the second class of girls, instruction in needle-work, knitting, &c.

For boys of from six to ten years of age, first class, twenty-six lessons of one hour each per week, from eight to eleven, and from two to four, every day ; thus :

- 3 hours for religious instruction, (principally narratives from the Bible.)
- 12 hours for the German language, pronunciation, reading, orthography, &c.
- 6 hours for arithmetic ; 3 for the slate as far as division, and 3 for mental arithmetic.
- 4 hours for writing.
- 2 hours for singing, (without counting the verses sung at the beginning and end of each day.)

—
26 hours.

For the second class of boys, from ten to fourteen years old, thirty-two hours of lessons per week, from eight to twelve, and from two to four, every day ; thus :

- 6 hours for religion, instruction in the Bible, and catechism.
- 10 hours for the German language, reading, grammar, intellectual exercises.
- 5 hours for arithmetic, on the slate and in the head.
- 4 hours for writing.
- 2 hours for geometry, and linear drawing.
- 3 hours for natural philosophy, geography, and history, &c.
- 2 hours for singing, (not including the verses sung morning and evening.)

—
32 hours.

Girls' school, first class, from six to ten years old, twenty-six hours' lessons a week ; thus :

- 3 hours for religion, (narratives from the Bible.)
- 7 hours for the German language.
- 3 hours for arithmetic, on the slate and mentally.
- 3 hours for writing.
- 2 hours for singing.
- 8 hours for needle-work, &c.

—
26 hours, from eight to eleven, and from two to four.

The second class of girls, from ten to fourteen, thirty-two hours' lessons ; thus :

- 6 hours for religion.
- 8 hours for the German language.
- 4 hours for arithmetic.
- 3 hours for writing.
- 3 hours for singing.
- 8 hours for needle-work, &c., (in the afternoon.)

—
32 hours, from eight to twelve, and from two to four.

A child shall be in a condition to pass from the first class to the second as soon as it can read well.

It may perhaps seem strange, that in this plan of study no mention should be made of the time devoted to exercises of the memory and the mental powers. But the committee has considered that these exercises are included in the course of study, which keeps the memory and intellect constantly in action. The lessons in the German language will always furnish exercises of this kind ; and in charity schools, above all others, it is necessary to avoid whatever is superfluous.

The children of the lowest class have generally received an ill bent from the example of their parents ; the strictest discipline is therefore required. Order, neatness, activity, prompt obedience, are by no means the least important things a child has to learn. The kind of instruction, the gravity of the master, his devo-

tedness to his pupils, are of themselves a solid ground-work for discipline. But rigor is sometimes necessary; and in a school for the poor especially, discipline should be inflexible in cases of disorder or indolence. But let the masters never forget, that the severest measures of discipline should be pervaded by a sentiment of tenderness and love, which chastises only to improve.

There are seven evening schools in Berlin. It will be sufficient to institute three more of fifty scholars each, two for boys and one for girls. The three ablest and most zealous parish schoolmasters shall be engaged to give from eight to twelve hours' lessons a week in the evening, for which they shall be paid a hundred thaler, (15*l*.) Reading and writing will be constantly taught there, and two hours a week devoted to religious instruction.

A greater number of evening schools will be opened, if they are found to be wanted.

Before entering upon a detail of the expenses which the city must bear for the support of fourteen parish charity schools, we will mention the very slight revenue which these schools can draw from other sources.

1. A government order, dated January 30, 1827, directs that in every parish charity school each pupil shall pay a fee of one silber-groschen (about five farthings) a month, in order not to violate the principle, that every father of a family is bound to contribute something to the school, even though he should claim for his children the favor of a gratuitous education; for the exaction of this trifling payment does not take from the instruction its gratuitous character, and this imperceptible charge produces nevertheless, in a school of three hundred children, the sum of 120 thaler, (18*l*.)

2. Amongst the poor, many who are unable to pay the terms of private schools, can nevertheless very well give, besides the groschen per month fixed by the minister of public instruction, a further sum, varying from five groschen as a minimum, to ten as a maximum. Out of three hundred children, this would apply to at least a fifth; and the minimum five groschen for sixty children, will give a revenue of 120 thaler, or 1680 for the fourteen schools, (136*l*.) This extraordinary fund (*Aushilfe-fund*) may be appropriated to the maintenance of the evening schools, to the instruction of children of a higher class who have fallen into poverty, and to rewards or pensions for schoolmasters in their old age, or to methodological courses for their improvement; so that the town would have no other expense to support than that of the fourteen parish charity schools.

3. Finally, the donations which the generosity of the citizens may give to the schools, but which can not be calculated on here, will form another resource for improvement in the education of the poorer classes.

The excellence of a school depends entirely upon the master; the choice of the master is therefore a matter of the first importance. In a school for the poorest class especially, where every thing is to be done, and where the master has constantly to struggle against the pernicious influence of the family and companions of the child, he should possess devotedness to his calling, patience, knowledge, an aptitude and taste for teaching; and with all these qualities, that rare disinterestedness which induces perseverance in a career at once humble and unaltered, and that enduring serenity of soul, that pious zeal which alone can secure prosperity to a school.

The masters who are examined and declared capable, shall be appointed for life; nevertheless, in case of negligence or misconduct, they shall be dismissed without appeal, by an order from the town authorities, approved by the school board.

Care should be taken, that whenever it is possible, the wives of the schoolmasters shall instruct the little girls in needle-work.

The immediate superintendence of each poor's school shall be specially confided to a committee consisting of one of the clergymen of the parish, named by the town school committee, and a member of the administration of the poor's fund, charged specially with the inspection of the external business of the school.

The supreme superintendence resides with the poor's administration and the town school committee, of which the *Stadt-Schulrath*, or school councillor for the town, shall always be a member.

The under masters shall be subject to the head masters; they may be dismissed at will either for incapacity or misconduct.

The purchase and maintenance of buildings for the schools in the various quar-

ters, the choice and superintendence of the masters, the administration of the school funds belong to the administration of the poor.

The charity board of each quarter, the clergyman, and the officer charged with the special superintendence, shall attend to:

1. The admission of pupils.
2. The control of the attendance at the schools.
3. The departure of the pupils.
4. The annual reports.

1. As there will be fourteen pariah charity schools required, the town will be divided into fourteen school wards, or districts, each having a complete school, (boys and girls.) All parents living in each district, shall apply to the charity board, and particularly to the special officer, to obtain admission for their children to the school.

This admission shall take place generally at two periods of the year, Easter and Michaelmas, at the commencement of the course.

The officer shall determine whether the child shall be admitted gratuitously, (always paying one groschen per month,) or be made to pay from five to ten alber-groschen, which will form the extraordinary fund.

This sum shall be paid in advance, from month to month, to an officer of the charity board chosen for this purpose, and shall be added each month to the extraordinary fund.

When the number of pupils fixed for each class of boys or girls (seventy-five) shall be complete, no more shall be admitted, and applicants shall be sent to the neighboring schools.

2. The regular attendance at the school shall be an object of special control and the most active vigilance; for this is the source from which flow all the advantages the school can produce. It would be very fortunate if parents and children were always willing of themselves to facilitate the measures adopted to secure regular attendance at the schools. Unhappily this is not the case, particularly in great cities. Although it is lamentable to be forced to use constraint, it is almost always necessary to commence with it; though in a town so populous as Berlin, its enforcement is attended with much difficulty.

In order to draw to the school all the children of an age to attend, the schoolmasters shall keep a register of attendance, and shall send, at the end of each month, an extract from this register, pointing out those who are most frequently absent.

The poor's commission, or one of its members, shall send for the parents, and if the excuses are insufficient, shall warn and threaten them. Every three months a list shall be made of the parents who will pay no regard to the repeated remonstrances of the commission, and the poor's administration shall then have recourse to means of constraint, conformably to section 48, of title XII,* in the second part of the general code, which adjudges the penalties for this offense. As an example to others, it would be well to publish, from time to time, a list of the parents who shall have been fined for not sending their children regularly to school.

But it is not enough to insure, as far as possible, this regularity in the children who come to school; other measures are needed to secure that no poor child whatever be deprived of elementary instruction. In great cities there are always a considerable number of unfortunate persons who have no fixed residence, who are shifting about every quarter, every month, and often every day. We see only one way of coming at these, which is this: to communicate with all the private establishments of elementary instruction, that are not under the direction of the town, and to arrange that, at a certain time, all the primary schoolmasters in the town, without exception, shall deliver to their pupils a certificate of attendance, the form of which shall be printed and sent to all the schools. The parents shall be obliged to show these certificates. At the same period, the municipal police, or commissions chosen from among the citizens, shall, by the aid of the census tables, effect a general and simultaneous inspection of the whole town. The list of the parents who shall not have shown the certificates of attendance at school, shall be made up in each district, and they shall be summoned before the correc-

* See page 95.

tional police and fined according to law, and compelled to enter their children in the schools.

The execution of such a measure would doubtless depend much on the zeal of the authorities intrusted with it; but difficulties should not deter us from the performance of the sacred duty of remedying so deplorable an evil.

3. The law requires that the instruction of the school should be continued, until the clergyman charged with the examination of the children shall deem them sufficiently enlightened on the subjects most important to a rational being of their class. No fixed age will therefore be named at which they shall quit the school. This will be determined by an order from the master of the school, and the clergyman charged with the special inspection; and since nothing superfluous will be taught in any parish poor's school, this decision will depend upon the child's having profitably gone through the course of instruction of the school, and acquired those moral qualities which its influence ought to have produced.

It will in general require at least six years fully to accomplish the end of an intellectual and moral education. Thus, the greater part of the children who enter at six or seven, will be sufficiently instructed at thirteen to quit.

The leaving of the school shall take place only at two periods of the year, Easter and Michaelmas, after a public examination. At the end of this examination, the ecclesiastical inspector and the master of the school shall make a list of the pupils who may quit. There shall be delivered to each a certificate of departure, the form of which shall be printed; and the most distinguished shall receive, by way of encouragement, books suited to their capacity; the expense will be defrayed by the extraordinary fund.

It would also be very useful that the citizens should be bound under a penalty not to take into their service or apprenticeship any child who had not a certificate either of departure or of attendance.

4. The annual reports of the ecclesiastical inspector and the officer of the charity board will serve to measure the progress of the schools. They shall treat of the internal state of the school; of the instruction and discipline, as well as the household expenses; and shall point out imperfections, to the remedy of which the poor's administration and the school board shall direct their efforts.

Dr. Bache makes the following remarks on this class of schools in 1838:

There are at present nine public elementary schools in the city, but if the classes were confined to seventy-five pupils each, as originally intended, fourteen schools would be required, according to the calculations of Mr. Reichen. The number of pupils, however, in charge of a single master, is greater than that just stated, thereby impairing essentially the efficiency of the schools.

The masters receive fixed salaries,* the fees which they collect, being paid over to the school committee. Of the two schools of this kind at Berlin, which I visited, one came up to the requirements of the law in the branches of instruction, except in the omission of linear drawing. In the other, both drawing and natural history were omitted. In the first, the branches were: 1. Religious instruction. 2. Reading. 3. German language. 4. The geography and history of Prussia. 5. Arithmetic. 6. Elements of geometry. 7. Weights and measures of the country. 8. Natural history. 9. Writing. 10. Singing. In none of these schools is the physical education of the pupils attended to. In each there is a girls' school, separated from that of the boys, and giving similar instruction, except that a portion of the time is occupied in works appropriate to the sex.

According to rule, these schools should have two classes for each sex, the head master teaching the first, and the assistant the second; in one, however, the two classes were sub-divided, forming four. The lowest class learns to read and write a little, and is then promoted. In the school of two classes, the lower contained pupils from six to nine, and even ten years of age, and the upper class pupils from

* The salary of the head master of both boys' and girls' schools, is two hundred and twenty-five dollars per annum, besides which he has his lodging and certain allowances, amounting to from seventy-five to a hundred and twelve dollars. The pupils pay at the minimum three, and at the maximum thirty cents per month. In one of the schools which I visited, the fees amounted in all to about nine dollars and seventy-five cents per month, the two-fifths of which, forming the master's perquisite, amounted therefore to about forty-seven dollars a year.

eight and nine to twelve and thirteen years. This division requires the union in one class of pupils in very different stages of progress, and renders simultaneous teaching almost out of the question. The lower class has twenty-six, and the upper thirty-two to thirty-four hours of instruction per week, the former having one hour less per day than the latter, which is a good arrangement. There is a short interval of recess in the morning exercises. 1. The religious instruction consists, in all the schools, of Bible history, catechism, and reading the Bible. The schools are for Protestants, and the Lutheran catechism is used. 2. The reading is taught by the phonic method. In many schools, the reading board and letter blocks are used; in one of those which I visited, writing was taught with reading. Exercises of thought and speech are interwoven with the elements of reading. The reading books are various, and combine progressive instruction in this branch with incidental information in morals, the history of the country, history of the church and of sects, biography, geography, natural history and elementary physics, grammar, &c. This incidental method is however, far from giving sufficient instruction, unless combined with the direct, though, by keeping it in view, the exercises in reading are prevented from degenerating into mere lessons of sounds. From the books which are allowed by the highest school authorities to be used, the committee of any particular school, after consulting the master, adopt such as they please, and when the teacher wishes a change, he applies to the same authority. The list of approved books is always sufficiently large to admit of the exercise of the individual judgments of the master and committee. The analysis of words and sentences is attended to in these schools, and exercises of induction are practiced, especially where younger masters from the teachers' seminaries are employed. As the method of teaching depends principally upon the master, it sometimes varies, even in the same school. If the precise routine were laid down, the spirit would be different, and thus, at last, it is the kind of education given to the teacher which determines the character of the school. It may be stated, however, that the instruction is either simultaneous or individual. 3. The German requires no special remark; it includes instruction in grammar. 4. The geography is taught by beginning with an outline of general geography, referring to maps, and learning from books. There is a great deficiency in the implements for teaching this branch. 5. Both mental and written arithmetic are taught. In one of the schools, the ground work is laid according to Pestalozzi's method, and the extent of the course is to the single rule of three, inclusive. Some of the pupils acquire great facility in mental arithmetic. 6. The geometry consists of the elements of form, according to Pestalozzi. 7. The weights and measures are taught as in our schools, by committing tables to memory, and not, as in Holland, by actual reference to the standards themselves. 8. The writing is taught by copying from ordinary copy boards, first on the slate, and then on paper. The blackboard is used in some cases. Writing from dictation is resorted to for orthography. The proficiency in this branch is, however, only tolerable. 9. Vocal music is taught by note, and particular attention is paid to church music. The school is begun and ended with a psalm or hymn, as well as with prayer.

The ordinary discipline is conducted without corporeal punishment, though it is allowed in extreme cases. The individuals of the classes retain the same places, unless in cases of gross neglect, or as a kind of punishment. These places are in some schools, regulated in the upper classes by a writing lesson at the end of the month, in which correctness in spelling, as well as neatness of handwriting, are taken into the account.

In addition to the class of elementary schools above described, there are at Berlin many more, public and private, numbering in 1850, over twenty thousand pupils under the age of fourteen years. Many children of this age are also to be found in the burgher schools, as well as in the lower classes of the gymnasia and real schools. The burgher schools embrace a wide range of studies and methods of teaching, from which teachers and committees in our own country can derive many

valuable hints. Although impressed with some general characteristics by the law, they differ according to the different circumstances of the population, whether in a large or a small village, or whether each is complete in its own course of study, or made preparatory in some of its classes, to entrance into a gymnasium or real school. There are upward of eighty schools of this grade, numbering over eight thousand pupils. We give descriptions of several of the most distinguished.

DOROTHEAN HIGHER CITY SCHOOL.

This is a burgher school of recent establishment, located in the Dorothean quarter of the town, from which the school takes its name. The pupils are admitted at six years of age, and may remain until sixteen, when they are prepared to enter a business life. If intended for a professional career, they pass from the second class to the third of a gymnasium or grammar school at about fourteen. At present, there is no first class, but this deficiency is to be supplied, and it is intended that a pupil of capacity, who has passed through its studies, shall be prepared for the second class of a gymnasium. In this case, private lessons in Greek must be taken, and I should judge that, when established, this class will be composed only of those who intend to finish their education here, so as to pass to a "real school," or to some "technical school." Many pupils are actually prepared here for entrance into the third class of a gymnasium, and the courses have been in part adapted to this purpose. The certificate of the first class of this school, as of others of its grade, gives the privilege of claiming but one year of military service, and qualifies for employments in the government bureaux, which, however, do not in general require a knowledge of Latin.

The school consists of about 200 pupils, arranged in five classes, of which the sixth and fifth, the lowest two, have courses of one year each, and the others of two years. There is a head master and four regular teachers, besides four assistants or special masters, who are employed during part of the school hours, or in teaching particular subjects. In the lower classes, each master teaches, in general, the whole round of subjects in which his class is occupied. In the upper classes, the teachers are confined to a few subjects. The arrangement of this matter is, however, at the discretion of the director or head master, who varies it as appears best for the interests of the school. In some of the classes, there is a special master for religious instruction, which, however, is not usual in Prussia.

The methods of instruction in this school are, in general, most excellent, and I was particularly struck with the small number of text-books employed. This is not peculiar, however, to this establishment, but is a feature in every good school in Germany. The master is expected to be so fully imbued with his subject, and expert in his art, as to be able to impart knowledge principally orally to his pupils, and in such a way as to adapt it to each individual; hence books are chiefly required for study at home, and individual training is possible to an extent which no routine system with books would permit.

The following statements give the course of instruction in detail:

RELIGIOUS INSTRUCTION.

Class VI. Stories from the Old Testament.

Class V. Stories from the New Testament.

Class IV. Bible History.

Class III. Reading and explanation of selections from the Scripture.

Class II. The evidences of Christianity.

The stories alluded to in the course of the sixth and fifth classes, are the most remarkable biographies of the Old and New Testaments. The stories are chiefly narrated by the teacher, frequently in the words used in the sacred volume; and in the fourth class, these same histories are read in the Bible itself. The narrations in the lower classes admit of various explanatory remarks and illustrations of the history, the natural history, and geography referred to. The subject of the narrative being thus familiar to the pupil, he is interested by the beautiful sim-

plcity of the language of the Bible, which otherwise he might fail to perceive, since his attention would be engaged with the incidents about which he was reading, rather than with the style. The study of the Evidences of Christianity would, it seems to me, be more suitable to the age of the first than of the second class.

GERMAN LANGUAGE.

- Class VI. Exercises of speech and thought (inductive exercises.) Preparatory exercises in reading by the phonic (lautir) method. Fluent reading of words and sentences.
- Class V. The most important parts of etymology explained by reading lessons.
- Class IV. Exercises of etymology. Reading from a text-book. Series narrated for written exercises. Orthographical exercises.
- Class III. Grammatical analysis of sentences.
- Class II. The same continued. Original written exercises and descriptions.

The exercises of speech and thought are admirably conducted. In teaching to read, the letter-box and composition-board, are used. The lowest class is divided into two sections in receiving this instruction, so that each teacher has not more than twenty-five pupils under his charge. The reading exercises throughout the course, will be found included under the title of "German." Diesterweg's reading book for schools is used in the lower classes.

LATIN LANGUAGE.

- Class IV. Regular verbs and other parts of speech. Translation of Gedicks's reading book.
- Class III. Constructions varying from the German. More difficult parts of Gedicks's reading book. Cornelius Nepos.
- Class II. Irregular parts of etymology. Syntax. Special reference to the differences from the German. Ovid.

Although the Latin is begun with the fourth class, it will be seen hereafter, that it occupies but a small portion of the time of each week, and as far as mental culture is concerned to those who leave off this study at fourteen, I can not say that observation indicated its utility. On the contrary, an imperfect knowledge is acquired, which can produce no good effect.

FRENCH LANGUAGE.

- Class V. Exercises in reading and translating small sentences.
- Class IV. Auxiliary and regular verbs. Exercises on simple sentences.
- Class III. Irregular verbs and rules on the use of pronouns. Numa Pompilius begun.
- Class II. More difficult parts of the French grammar. Numa Pompilius completed.

ARITHMETIC.

- Class VI. The four ground rules, with numbers up to one thousand.
- Class V. Denominate numbers, and preparatory exercises in fractions.
- Class IV. Fractions.
- Class III. Proportions, with their applications.
- Class II. Elements of algebra, involution, and evolution.

GEOMETRY.

- Class V. Regular figures, &c., from the elements of geometry.
- Class IV. Lines, angles, and triangles.
- Class III. Circles and Polygons. Mensuration of plane figures.
- Class II. Similarity of figures, &c.

The geometry is here introduced earlier than in the seminary school, and, in general, the studies of the fifth class appear to me rather too much diversified for their age.

NATURAL HISTORY.

- Class IV. Domestic animals.
- Class III. Viviparous animals.
- Class II. Birds and fishes, illustrated by a small collection.

Physics is also taught in the second class, so far as to give a knowledge of the general properties of bodies.

GEOGRAPHY.

- Class V. Knowledge of home. The district. The provinces. The kingdom.
- Class IV. General geography.
- Class III. Principal countries of Europe.
- Class II. Europe more in particular.

The knowledge of home includes an account of its history, its monuments, distinguished men, &c.

The course in geography follows the plan already described in the burgher school of Halle.

HISTORY.

Class IV. A general view of the more important historical events, with the study of particular ones in detail.

Class III. Ancient history.

Class II. Modern history, to the time of the reformation.

The general history is rather a series of biographical sketches than a regular narration of events, and serves well as an introduction to systematic historical studies.

WRITING.

Class VI. Preparatory exercises in the lower division. Letters and words in the upper.

Class V. Single letters and small sentences.

Class IV. Writing from copy slips.

Class III. Writing with special reference to orthography.

The elements of writing are taught according to Pestalozzi's method, the upper and lower limits of the letters being given by horizontal, and the slope by inclined lines.

DRAWING.*

Class VI. Preparatory exercises. Regular figures

Class V. Drawing of bodies in elevation.

Class IV. Solids bounded by plane figures and straight lines.

Class III. Solids bounded by plane figures and straight lines, with shadows.

Class II. Solids bounded by curved surfaces.

The method of instruction is that devised by Mr. P. Schmidt, which is described particularly in the account of the royal real school of Berlin, of which he is teacher.

SINGING is taught by ear in the two lower classes, and by note in the upper. The execution by the second class, which I heard, was excellent. They sing in parts and by note.

The following table shows the time devoted, in school, during the week by each class to the several subjects of instruction :

ARRANGEMENT OF THE BRANCHES OF INSTRUCTION AT THE DOROTHEAN HIGHER CITY SCHOOL.

SUBJECTS OF STUDY.	HOURS PER WEEK.					
	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Total.
Religious Instruction,	2	2	2	2	4	18
German Language,	4	3	5	8	10†	42
Latin,	5	6	4			30
French,	4	4	4	2		26
Arithmetic,	3	3	3	4	4	26
Geometry,	2	2	2	2		14
Natural History,	4‡	2	2			16
Geography,	2	2	2	1§		13
History,	2	2	2	1§		13
Writing,		2	2	4	4	16
Drawing,	2	2	2	2	2	16
Singing,	2	2	2	2	2	16
Total,	32	32	32	28	26	

* The book embodying Schmidt's method of drawing, has been translated and published by E. P. Peabody, Boston.

† Six hours of the instruction called "German," are devoted in the sixth class to learning to read, and four to "Exercises of speech and thought."

‡ Two hours of this instruction is given to physics.

§ In the fifth class, geography and history are combined under the title of "Knowledge of home."

|| This column is obtained by doubling the numbers in those classes of which the course is for two years, and adding the numbers for the other classes.

The three higher classes have, as shown by the table just given, six hours of recitation every day, except Wednesday and Saturday, which are half-holidays, and on which they have but four hours. The lowest class has but five hours for four days in the week, and three the other two. The increase of school hours in the upper classes, is manifestly a proper arrangement.

This distribution of time assigns to language, including German, Latin, and French, ninety-eight hours; to sciences and the kindred branches, namely, arithmetic, geometry, natural history, geography and history, eighty-two; to the branches which specially educate a part of the senses, while they have important applications in after-life, as writing, drawing, and singing, forty-eight hours, and to morals and religion, eighteen hours.

The burgher school connected with the teachers' seminary, recently established to educate teachers for the city schools, present several modifications of the above course, both in the order, and extent to which the studies are pursued.

SEMINARY SCHOOL OF BERLIN.

This is a burgher or middle school, founded in 1832, and attached to the Teachers' Seminary of Berlin,* taking its name from this connection. The school is for boys only, and, like other higher burgher schools, it serves to prepare for the third class of a gymnasium, as well as for entrance into active life. The same teachers give instruction in this school and in the seminary, being assisted here by the pupils of the seminary, to whom this serves as a school of practice. There are four regular teachers, besides the director, and also masters for drawing and singing.

The pupils are admitted as early as five and six years of age. The time of year for general admission is Easter. There are six classes in the school, the lower four of which each retain the pupil, if industrious and intelligent, a year, and the two upper, each two years. The whole course thus lasts eight years. Fifteen is, however, the usual age at which those who do not pass to the gymnasium leave the school. The average number of pupils in each class is thirty.†

Every month there is a private examination, in presence of all the teachers, at which the parents may attend. Every three months the pupil receives a note of progress and conduct, to be handed to his parents. Formerly a printed circular was sent, containing information in the form of an abstract from the account kept of recitations and conduct. It has been found, however, much more effectual to give a written statement of the character of the pupil, derived from the school journal, inasmuch as it insures more certainly the attention of parents. At Easter, a public examination is held, and those who have made a proper proficiency in their studies are passed to a higher class.

Arrangements exist by which those pupils whose parents desire it, may study under the superintendence of a teacher,‡ during the time considered necessary for the preparation of the lessons of their class. The following division of the studies of the school is made by the director.

1. RELIGIOUS INSTRUCTION.—Bible history. History of the Church and of the Reformation. Protestant Catechism.

2. LANGUAGES.—(a) German. Fluency in reading, and readiness in answering questions. Capability of writing an exercise upon an ordinary subject. Grammar of the language. (b) Latin. Orthography, etymology, and the elements of syntax. Translation of an easy Latin author (Cornelius Nepos) into German, or of an easy German author into Latin. (c) French. Knowledge of the Grammar. Facility in the translation of easy authors, and in writing compositions.

3. SCIENCES.—(a) Arithmetic. Mental and written. Positive and negative quantities. Involution and evolution. (b) Geometry. Plane geometry, with practical applications. (c) Natural History. Knowledge of the most important minerals and plants of the neighborhood. General

* Of which Dr. Diesterweg is director.

† The school fees for the four lower classes are three dollars and seventy-five cents per quarter, and for the two higher classes four dollars and fifty cents per quarter, besides a charge of one dollar twelve and a half cents for fuel during the winter.

‡ The fee for private study is four dollars and fifty cents per quarter.

outline of zoology and anthropology. (d) Geography, physical and mathematical. (e) History. Outlines of universal history. History of the country.

4. MECHANICAL ACQUIREMENTS.—(a) Reading. (b) A good handwriting. (c) Draughts of models, furniture, &c. (d) Singing.

It will be found, subsequently, that I have taken reading out of this class, and placed it beside the German language, to which it is subsidiary, and where it is classed in the preceding school.

In regard to the methods of carrying out this course, the following rules are laid down, and after carefully visiting the school, I can testify that they are fully observed. Indeed, this is one of the most interesting establishments which I saw, from the liveliness and activity which prevails in its classes.

The principle of induction is used, as far as practicable, in all branches; thus, in the earlier exercises, an object is presented to the pupil, who is led to notice its peculiarities, and to express his conceptions of them. He passes from objects which are known, and even familiar, to the unknown. Unknown objects are illustrated, if possible, by models, and the names of the parts are taught, and their uses or properties examined. The pupil proceeds first from particulars to generals. Subsequently, the order is reversed. He is made to understand whatever he is required to remember; to find out for himself, if possible, rather than to be taught directly.

Historical and similar subjects are taught by lecture, mingled with questions. The pupil is led to express himself readily and correctly; the teacher speaks no more, therefore, than is absolutely necessary for explanation, or to induce suitable answers. Self-exertion, on the part of the pupil, is constantly encouraged. He is taught to observe whatever is interesting. Imitation of what is seen, and repetition of what is heard, lead to original thought. This, however, is to be expected only from pupils of talent, and hence the teacher must be satisfied to allow some to learn what others have found out. The common mistakes of overburdening the mind with positive knowledge, and of too much system in teaching, are to be avoided, as both are injurious to mental development. The teacher must be able to make his subject interesting, and, therefore, should know how to communicate it without a book, and to elicit the knowledge of his pupil by proper questions. It is the mental activity of the pupil which will determine the measure of his success in after life; and hence this activity, rather than positive knowledge, should be looked to as the object of the instruction at school.

In regard to this last-named principle, although I consider it applicable, in a great degree, in elementary education, yet it appears to me that exception must be made of the cases of pupils who intend to enter active life on leaving the school, and to whom, therefore, the knowledge which they will have immediate occasion to use, should be imparted, to render their education effective. In general, where the mind may be cultivated by different studies, choice should be made of those most likely to be applied by the individual in his future career, especially if his education is necessarily to terminate before he can have time to master the complete circle.

RELIGIOUS INSTRUCTION.

Class VI. Four hours per week. Narration by the teacher of stories from the Old Testament, in the words of the Bible, repeated by the pupils. Easy verses learned by heart.

Class V. Four hours. Stories from the gospels, except the latter portion of the Life of Christ. Church songs and Bible verses learned.

Class IV. Three hours. The Old Testament in a more connected form. The moral of the history is impressed upon the children. The Ten Commandments and church songs committed to memory.

Class III. Two hours. The life and doctrines of Christ, to the period of his imprisonment. Church history. Four weeks are set apart for learning the geography of Palestine.

Class II. Two hours. The Protestant catechism committed to memory and explained. Church songs and verses committed.

Class I. Two hours. A compendium of the history of the Christian Church, particularly after the apostolic age. History of the Reformation. Review of the Bible. Committing to memory psalms and hymns, continued.

GERMAN LANGUAGE.

Class VI. Four hours. Exercises of speech. Stories narrated to the children and repeated by them. After learning to write, these stories are written upon the slate.

Class V. Four hours. Exercises in orthography. Etymology begun.

Class IV. Four hours. Exercises in orthography and style. Every week a short composition is written on some subject which has been narrated.

Class III. Grammar continued.

Class II. Four hours. Original compositions, which are corrected during the recitations. Syntax commenced.

Class I. Three hours. Compositions on historical subjects. Essays written at home, and corrected in the class-room. Syntax continued.

LATIN LANGUAGE.

Class IV. Three hours. Declensions of nouns, adjectives, and pronouns learned. Examples learned by heart, and others written as an exercise at home. Auxiliary verbs conjugated.

Class III. Four hours. Comparison of adjectives. Regular verbs conjugated.

Class II. Four hours. Irregular verbs. Syntax begun. Translation from Latin into German.

Class I. Six hours. Grammar continued. Written exercises at home and in the class. Every four weeks an extempore exercise is written, which the teachers correct out of school hours. Cornelius Nepos read and construed.

FRENCH LANGUAGE.

Class III. Three hours. Exercises in reading. Elements of grammar. Words learned by heart. Easy exercises written at home and in school hours.

Class II. Four hours. Regular and irregular verbs learned. Syntax. Translations from French into German. Words learned by rote.

Class I. Four hours. Written exercises of increased difficulty. Tables dictated and learned by heart. Voltaire's *Charles XII.* read.

ARITHMETIC.

Class VI. Four hours. Practical arithmetic. The fundamental operations taught with numbers from one to one hundred: first mentally, then with blocks, and afterward with figures. Exercises prepared at home twice a week.

Class V. Four hours. The four ground rules continued, with numbers as high as one thousand. Exercises in reading and writing large numbers. Mental arithmetic especially practical. Addition and subtraction of abstract numbers.

Class IV. Four hours. Addition and subtraction revised. Multiplication and division of abstract numbers. Weights and measures explained.

Class III. Four hours. The four ground rules, with fractions.

Class II. Three hours. Revision of the above. Rule of three.

Class I. Three hours. In the first year practical arithmetic finished. Proportions and decimal fractions. Elements of algebra. Mental algebra.

GEOMETRY.

Class IV. Two hours. The essential preparatory exercises in form, in connection with drawing. Rudiments explained.

Class III. Two hours. Practice in the position of points, drawing of lines, angles, plane figures, representations of solids.

Class II. Two hours. Elements of geometry proper, the point, line, angles, triangles, and measures of straight lines, surfaces, and contents.

Class I. Two hours. Plane geometry completed, with practical exercises. Every alternate six months lessons in physics are given.

NATURAL HISTORY.

Class II. Two hours. In the summer term, study of certain classes of plants. In the winter term, of animals. The subject is illustrated by drawings.

Class I. Two hours. Systematic botany during the winter term, and zoology and mineralogy during the winter.

GEOGRAPHY.

Class III. Two hours. Knowledge of home. Berlin and its environs. Regency of Potsdam. Province of Brandenburg. Necessary technical terms explained, as horizontal, vertical, &c.

Class II. Two hours. Geography of Prussia and Germany.

Class I. Two hours. General geography, particularly Europe and America. Asia more generally. Africa and Australia very briefly.

HISTORY.

Class II. Two hours. View of universal history, biographical rather than chronological.

Class I. Two hours. First year universal history completed. Second year the history of Germany, and particularly of Prussia. The most important inventions and discoveries are noticed in connection with the history of these countries.

READING.

Class VI. Seven hours. Reading by the phonic (*lautir*) method. Analysis of words in regard to division into syllables and sounds.

Class V. Seven hours. Mechanical reading continued, but with reference to the meaning of the words. The pupils are examined upon words, sentences, and paragraphs.

Class IV. Four hours. Explanatory reading continued. Accentuation. No piece is allowed to be read without its being understood.

Class III. Two hours. Rhythmic reading begun. Interesting portions of the matter read, narrated by the pupils in their own words.

Class II. Two hours. Rhythmic reading continued.

Class I. Two hours. Reading of some of the German classics. Analysis of the subject read.

WRITING.

- Class VI. Five hours. Introductory exercises of drawing upon the slate. Copying the small letters from the blackboard. Writing on paper. Capital letters. Written exercises at home twice a week.
- Class V. Five hours. Writing of German characters continued. Roman letters begun. Copying from a book at home, with special reference to orthography.
- Class IV. Four hours. Writing in German and Roman characters continued. Two hours copying from copy-slips. Two hours writing from dictation.
- Class III. Three hours. Exercises of Class IV. continued. Pupils who write well are allowed to write without lines. Writing without copies, according to progress.
- Class II. Two hours. Exercises continued. Most of the pupils write without lines, or by directing points merely.
- Class I. The written exercises in other departments are examined, to ascertain the character of the handwriting. No special lessons are given.

DRAWING.

- Class IV. Two hours. Drawing straight lines in various directions and of various lengths. Making definite angles. Drawing triangles, squares, and other rectilinear figures.
- Class III. Two hours. Drawing of circles and ovals.
- Class II. Two hours. Drawing of bodies bounded by planes and straight lines in perspective. Drawing of curves.
- Class I. Drawing from natural objects, from plaster casts, and models.

SINGING.

- Class IV. Two hours suffice to learn fifteen or twenty songs, of one or two verses, by note, and some ten choral songs.
- Class III. Two hours. Songs with two parts continued. Chorals with one voice.
- Class II. Two hours. Songs with two or three voices continued.
- Class I. Two hours. Songs and chorals with three or four parts.

Once during the morning there is an interval for recreation in the court-yard of the school, and the pupils are directed in their exercises of marching and counter-marching, and the like, by one of the teachers.

The course marked out in the foregoing programme, as far as it extends, seems to me well adapted to educate the moral and intellectual faculties, as well as the senses; to give mental vigor, while it furnishes information useful to the pupil in after life.

There are peculiarities in regard to the religious instruction, even as intended for Protestants, which may be remarked in the fifth and third classes, the object of which I do not understand. In other respects, when sectarian instruction may be given, as in this school, where all the pupils are of one denomination, the course appears to be good. The manner of communicating the instruction by conversation and lectures, renders it very effective. There are in all the classes, taken together, twenty-two hours per week devoted to religious instruction here, and eighteen in the other, but the programme does not show a gain in the amount of knowledge communicated.

The course in the mother tongue is fully explained in the programme, and is well adapted to produce fluency and accuracy of expression in conversation and writing. Both this and the foregoing course extend, as they should, through all the classes.

The Latin language is introduced with a view to preparation for a gymnasium, in the nomenclature of natural history, the business of the chemist and druggist, and perhaps, to use the language of an accomplished teacher in one of the higher town schools, "because such always has been the custom." I would give the preference to the course of this school over that of the other, considering the time of twenty-seven hours devoted to it more appropriate than of thirty, as in the other.

The French, besides, combining with the German and Latin to give the due proportion of intellectual culture from language, is introductory to the courses in the real schools, which are parallel with the gymnasia, and prepare for the polytechnic or other special schools, as the latter do for the university. It is practically useful, too, to the shopkeeper and tradesman of the continent of Europe, and was, probably, formerly more so than at present. The Latin language is begun in the fourth class, or at about eight years of age, and the French language in the third class, but neither occupy more than three hours a week, until a year afterward. These languages occupy forty-seven hours per week, during the entire period through which they are taught.

Nothing can be better than the foundation laid for arithmetic. The pupils are

engaged a year in practical arithmetic before they are introduced to a knowledge of abstract numbers. Habits of thought are given by simple exercises in mental arithmetic. The eye is enlisted to aid the mind by computing with cubes, according to the method in the schools of Holland. Written arithmetic relieves the mental exertion, aids the memory, and trains the hand. The course is then carried on, combining mental and written arithmetic, and reaching algebra, which is also, in part, taught mentally.

The course of geometry begins with ideas of form, in connection with drawing, according to Pestalozzi's method, which it follows in general. It is thus a powerful means of stimulating the mind, and, though the time occupied is greater than if the subject were taught in the ordinary way, the results are much more satisfactory. If there is latent mathematical talent in a pupil, his powers of invention cannot fail to be drawn out by this method.

Natural history is not left to incidental instruction, to be derived from the reading-book, but is directly taught in the last two years. I had not the opportunity of judging of the fruits of this instruction in the seminary school itself, but the pupils of the seminary were pursuing the subject with zeal. In comparing this course with that of the other school, I think it preferable, except in the omission, at the beginning, of an account of the domestic animals. There will be, I doubt not, great improvements in teaching this branch at a future day. At present, the plan is hardly formed, and the collections for illustration, where they exist at all, are, in general, quite small. There is, besides, a tendency to make the course too strictly scientific.

The system of instruction in geography is begun in the third class, or at nine years of age, with a description of home. History, which in its elements is combined with geography, takes a separate place in the second class. The practice of giving biographical sketches instead of mere chronological details, cannot be too much commended. The pupil learns with interest the events of the lives of men who have made an impression upon the age in which they lived; these events form an outline which is easily fixed in the mind, and may subsequently be filled up in detail. Again, the discussions of inventions and discoveries in art or science afford relief from the descriptions of battles and revolutions, and serve to show the influence of genius exerted in civil life.

The phonic method of teaching to read, wants only the use of words having a meaning, as in Mr. Wood's system, to be nearly perfect. No reading is allowed, however, without understanding not only the words, but their connection, and the ideas conveyed by the sentences. The habit of thus giving paraphrases of subjects, leads to facility of expression, and by combining this with copying from good models, a correct style is formed. The course of reading of the highest class, includes selections from the German classics. Introductory exercises in drawing precede the instruction in writing; these might, I have no doubt, be much further extended with advantage.* A good handwriting is produced by the succession of exercises described in the programme. The course of drawing, which is commenced as a distinct branch in the fourth class, is intended to enable the pupil to sketch correctly, and with facility, such objects of furniture, machinery, &c., as he may have occasion to represent in his occupations in after life. The addition of two hours of drawing in the fifth class, would seem to me not to overburden the class with work, while it would add materially to their proficiency in this useful branch.

Singing is successfully taught, and by note. It is considered an indispensable branch of instruction, and all my convictions are in its favor, whether as a means of developing moral sentiment, or of physical education. Singing by ear might, however, very well begin in the lower classes, and for this purpose the number of hours of instruction per week might be increased from twenty-four to twenty-six in the lowest, and twenty-eight in the fifth class.

The time allotted to the different studies will appear better by the annexed table. In regard to the ages of the pupils, inserted in the heading of the columns, it is to be understood that they are those of intelligent and industrious boys entering at six years, and going regularly through the classes. The subjects of

* As has been done for the elements of an English hand, by our countryman, Mr. Rombrandt Peale, in his admirable system of graphics. The forms of the German letters would require a different system.

instruction are placed in the first column, the number of hours per week occupied by the several classes in the following ones, and the total number of hours devoted to each subject, while in the school, in the last column. In forming this total, the number of hours occupied by the four lower classes, the course in each of which is of one year, is reckoned once; and the number of hours of the two upper classes, each course occupying two years, is doubled.

Table of distribution of time in the Royal Seminary School of Berlin.

SUBJECTS OF INSTRUCTION.	NUMBER OF HOURS PER WEEK.						
	First Class. 12 yrs. 13 yrs.	Second Class. 10 yrs. 11 yrs.	Third Class. 9 years of age.	Fourth Class. 8 years of age.	Fifth Class. 7 years of age.	Sixth Class. 6 years of age.	Totals.
Religious Instruction.....	2	2	3	3	4	4	22
German Language.....	3	3	4	4	4	3	27
Reading.....	2	2	3	5	8	7	31
Latin Language.....	6	4	4	3			27
French Language.....	4	4	4				20
Arithmetic.....	3	3	3	4	4*	5	28
Geometry.....	2	2	2				10
Natural History.....	2	2					8
Geography.....	2	2	2				10
History.....	2	2					8
Writing.....		2	3		4	5	19
Drawing.....	2	2	2				12
Singing.....	2	2	2	2			12
	82	82	82	26	24	24	

From this table it appears that language occupies one hundred and five hours, estimating the time devoted to reading with that for German, Latin, and French, science sixty-four hours, and the mechanical branches, including writing, drawing, and singing, forty-three. It would be erroneous, however, to suppose that the results are in these proportions. The least consideration will show that the progress in different branches in the same school cannot be estimated by the time devoted to them; the intrinsic difficulties of acquisition, the different periods of the course at which they are introduced, and various other causes, prevent comparisons of this sort. Not only so, but the time occupied in the same subjects in different schools, which might be thought to afford an accurate test of comparative progress in them, can not, in reality, be employed for this purpose, without at the same time carefully studying the programmes, to ascertain how the time is applied in each class, and the manner in which it is distributed among the several classes. The two higher city schools just described, afford conclusive evidence of this fact. There can be no doubt, I think, that the Dorothean school is the stronger in language, and the seminary school in science. Such is the general reputation of the two, and such is the tone which the director of each would be likely to give to the school under his charge. The impression which I derived from visiting the two establishments was to the same effect. The number of hours per week devoted to language in all the classes of the two schools is, however, ninety-eight for the first, and one hundred and five for the second, and to science, eighty-two for the former and sixty-four for the latter; leading, in both cases, to the reverse of the conclusion just stated. If differences in the arrangement of studies, in the power of the teachers, in the methods and implements of instruction, and even in the pupils themselves, may lead to such results, small differences in the proportion of time allotted to different branches should not, without carefully checking their results by other comparisons, be assumed to indicate corresponding differences in the value of the courses.

In following the course of studies of these two schools, it will be seen that those

* This includes preparatory geometrical exercises.

of the lowest class, in each, are almost identical. In the next, the seminary school has greatly the advantage in the compactness of arrangement, by which the attention of the pupil is confined to fewer subjects. No less than ten branches are introduced into the programme of this class in the Dorothean school, while there are but five in the seminary school. The scientific branches, except those which run through all the years, are introduced later in the latter school, which is in accordance with the principle of concentrating the attention on a few subjects, where it is possible. It appears to me that, in general, it is not proper to introduce these branches early, except as matters of incidental instruction. The separation of the programmes of the two schools, produced as just stated, renders it difficult briefly to compare the courses of the same class in each. A general comparison of the subjects shows that the German language is taught according to the same plan in each, and that the highest class attains the same level in each, as far as the grammar is concerned; much more attention, however, is paid in the seminary school to the reading courses, as well for the acquisition of reading as an art, and to cultivate a taste for it, as for the incidental knowledge to be communicated. Nearly one fourth of the pupil's time, in the school just named, is devoted to the vernacular. The Latin is begun in the same class in both schools, but the course in the Dorothean school at once takes the lead of the other, and keeps it throughout. The French begins in the fifth class in one school, and in the third in the other; and, though the programmes terminate at about the same point, there is a greater proficiency made in the Dorothean school. One object, if not the principal one, of learning this language being to speak it, the early commencement is an advantage. In a general comparison of progress in language, the Dorothean school, as already stated, ranks higher than the other.

The courses of arithmetic are different, but terminate at the same level; I have already mentioned my preference for the course of the seminary. Geometry is begun in the fifth class in the Dorothean, and in the fourth in the seminary school; the courses go on together for three classes, and extend further in the latter institution. The differences in the courses of natural history have already been the subject of remark. The course of geography is essentially the same, differing only in the age of the pupil at beginning. History is begun in the fourth class of the Dorothean, and in the second in the seminary school; it is more systematic in the former, and assumes more the form of biography in the latter; the range of the two courses does not differ essentially. Taking these branches, classed as scientific, together, the superiority is with the seminary school, and thus, in both this and the former case, the judgment which would have been pronounced by referring to the numbers merely, is reversed.

SEMINARY SCHOOL AT WEISSENFELS.

The Dorothean and Seminary school are described by Dr. Bache as characteristic specimens of the higher burgher school of Prussia. In the same connection he introduces the two following schools, the Seminary school at Weissenfels as representing, not a burgher school as it is denominated, but as covering the ground of a well organized elementary school for a village, and the higher burgher school of Potsdam, as carrying elementary instruction into the domain of secondary education.

This is a higher elementary, or lower burgher school, attached to the seminary for teachers at Weissenfels, and is under the charge of the director of the seminary. The school is intended not only for the benefit of the citizens of Weissenfels, but also as a model school, in which the pupils of the seminary may reduce to practice, under the eye of their teachers, the lessons of theory in the art of teaching, which forms an important part of the course of the seminary.

The school has four hundred pupils, male and female. They are divided into five classes, in the three lower of which the two sexes receive instruction in common, being separated in the highest. Each class averages thus eighty under the charge of one master, who is, however, assisted by the pupils of the seminary.

The following table shows the subjects of instruction, and the amount of time devoted to each. The whole course usually lasts seven years, when the pupil enters at the age of six or seven.

TABLE OF THE DISTRIBUTION OF TIME IN THE SEMINARY SCHOOL AT WEISSENFELD.

SUBJECTS OF INSTRUCTION.	NUMBER OF HOURS PER WEEK.				
	Boys' Class.	First Class.	Second Class.	Third Class.	Total.*
Religious Instruction,.....	6	5	4	4	34
German Language,.....	4	3	3	1	21
Reading,.....	2	4		3†	25
Inductive Exercises,.....				1	1
Arithmetic,.....	4	4	4	4	28
Geometry,.....	3				6
Geography, History, Natural History, &c.,.....	3	2	3	1	17
Writing,.....	3	4	4	8‡	30
Drawing,.....	2	2	1	1	11
Singing,.....	3	2	2	3	17
Total,	30	26	26	26	

The *religious instruction* consists in the narration of Bible stories, and in pointing out the appropriate moral; in Bible history in a more connected form; in learning Luther's catechism, and committing parts of the Bible to memory. The pupils are also expected to give an account of the Sunday's sermon. The study of *German* includes the grammar. There are exercises specially of orthography and syntax in the upper classes. Poetry is also committed to memory.

The elements of *reading and writing* are taught together according to Dr. Harnisch's method.§ In the upper classes, the reading lessons are intended not only to give fluency in the art of reading, but also incidental instruction in grammar and general knowledge.

Direct exercises of *induction* are in use only in the lowest class.

The instruction in *arithmetic*, extends through fractions; mental arithmetic preceding written through all the rules. That of *geometry*, consists merely of the elements of form, according to Pestalozzi.

Under *geography and history* are included both physical and political geography and biography. With the physical geography is interwoven an account of the productions of nature and art of different countries. In the summer, the pupils are made acquainted with the botany of the environs, and in winter receive lessons upon animals, &c.

Writing on paper is a matter of privilege attainable by those who improve sufficiently. The others write on slates. The first lessons in drawing are introductory to writing; afterwards it is made a separate branch.

The higher classes learn *music* by note, and sing twice a week in company with the pupils of the normal school. The violin is used in leading the class singing exercises.

The discipline and instruction are admirable. The teachers have little occasion to use punishment. The instruction is chiefly given *vis a voce*, and the pupils in general appear interested in their studies. A book is kept for the record of delinquencies, which is examined by one of the superior masters once a week, and notice taken of the faults recorded. The director examines it once a month, and admonishes those who need it. Corporal punishment is resorted to only in extreme cases.

* This column is calculated on the supposition that the pupil remains in the school from six until thirteen years of age, passing through the lowest class in one year, and each of the others in two years.

† As the instruction in writing and reading is combined, I have placed half of the number of hours under each head.

‡ Of these eight hours, three are combined, reading and writing, and two copying.

§ See page 200.

The two schools first described, will be found to vary very considerably in their arrangements from this one, forming the opposite extreme as it were, of the class, but a connecting link will be supplied by the burgher school of Potsdam, which is intended to cover the ground occupied by both divisions.

HIGHER BURGHER SCHOOL OF POTSDAM.

This school differs from those already described in several particulars, exemplifying, in its arrangements, the division into lower and higher burgher schools, and carrying the courses of the latter decidedly into the domain of secondary instruction. Its principal objects are to prepare children of both sexes for occupations connected with, or corresponding to, the lower trades, and boys for the higher mechanical occupations, as builders, architects, &c., or for admission into the trade school connected with the government, mechanics', or trade institute at Berlin, and for the gymnasium. This school thus supplies instruction of different grades; first, elementary instruction of a higher kind; second, that usually given in the "real schools" of Prussia, and third, that necessary for entrance into the higher classes of a gymnasium, or grammar school. Hence its studies embrace many subjects and stages of progress which properly belong to secondary instruction, and even to a greater degree than other higher burgher schools.

The pupils pursue a course common to all in the three lower classes, or from about six to eleven or twelve years of age, when a separation takes place. Those who are to leave school at thirteen or fourteen, pass into the "middle burgher school class," in which the study of Latin and French is dropped, and the time is devoted to religious instruction, German, mathematics, geography and history, the elements of natural history, technology and physics, writing, drawing, and vocal music. Those pupils who are preparing for a higher class of a gymnasium, or who intend to pursue the entire course here, pass from the third class to the "second burgher school class." These arrangements appear to meet the wants of the citizens of Potsdam, for, in 1837, forty-two pupils passed from the third class to the middle burgher school class, and forty-one to the second class of the higher school.

Pupils preparing for the sixth class of a gymnasium leave this school in the "second elementary class," or at about nine or ten years of age, and those who aim at the third class of a gymnasium, usually pass from this at the close of the course of the second class in the higher school. The first, or upper class, thus contain only those pupils who intend to enter into active business life on leaving the school, or to enter a special school of arts and trades. On this account, the branches of science which are immediately applicable to such objects, are introduced into the course. This class consisted, in 1837, of ten pupils. The complete course is usually gone through at or before sixteen years of age, and entitles the pupil to claim one year of voluntary military service, instead of the three regular years, and qualifies him for appointment in the government bureaux.

The six boys' and three girls' classes have twelve ordinary teachers, besides one assistant, and two female teachers. Each of the lower classes has but one teacher, who attends to all the subjects as in the other schools already described. The total number of pupils was, in 1837, four hundred and fifty-six, of whom three hundred and twenty-three were boys.

The usual system of change of place in the classes is employed to excite emulation, and discipline is mainly conducted by means of a black-book in which a pupil's name is entered at the end of the week or month, when he has had a certain number of faults per week, or per month, marked against him by the teacher. Marks of merit are allowed to cancel those of demerit. The entry is communicated to the pupil's comrades, and also to his parents. As far as I have been able to judge of these and similar systems of discipline in day schools, I have not found any marked good effects from them. If a teacher is competent, he keeps up good discipline without them, and if he is not, they are of little or no service to him. In this remark I do not mean to include communications to parents, which are frequently of the greatest utility. The following plan, which apparently bears some analogy to this, but which owes its efficacy to a different principle, is in successful operation in Dr. Mayo's excellent boarding school at Chesham, in Surrey, England. When a pupil proves insensible to the admonitions of the teacher, and

is frequently reported for offenses or negligence, he is required to show to the principal a written statement of character from each master after every hour. He is thus subjected to admonition or other punishment from the principal immediately after committing an offense. For this very strict supervision, one extending over a day or week is substituted when improvement manifests itself, or when the case does not require so great severity.

I propose now to give a statement of the courses of the burgher school at Potsdam, and of the time required for their completion, with remarks and comparisons with the schools already described.

The annexed plan of the distribution of time gives also a list of the subjects of instruction: it is arranged exactly like the similar ones already presented. The first two columns of figures on the left hand refer to the number of hours of study per week in the two classes of the higher school. The third contains those of the middle burgher school class, the pupils in which terminate their course here. The next three contain the hours of study of the elementary classes, which are common to the whole school.

TABLE OF THE DISTRIBUTION OF TIME OF THE HIGHER BURGHER SCHOOL OF POTSDAM.

SUBJECTS OF INSTRUCTION.	First or Upper Burgher School Class. 14 and 15 years of age.	Second Burgher School Class. 12 and 13 years of age.	Middle Burgher School or Upper Class. 12 and 14 years of age.	First Elementary Class. 10 and 11 years of age.	Second Elementary Class. 8 and 9 years of age.	Third Elementary Class. 6 and 7 years of age.	Totals.
Religious Instruction,	2	2	2	3	3	2	24
German Language,	3	3	6	5*	5*	6†	44
Reading,			3	3	4	6	26
Latin,	6	6		4	4		40
French,	4	4	4	2	1		22
Arithmetic,	3	3	2	4	4	4	36
Geometry,	2	2	2	1‡	2§	2§	18
Natural History,		2	2	2		2	16
Geography,	2	2	2	2	1		14
History,	2	2	2	1			10
Technology,	2						4
Physics,	2	2	2				8
Chemistry,	4						8
Writing,	2	2	3	3	3	4	28
Drawing,	2	2	2	2			12
Singing,	2	2	2	2	2	2	20
	38	34	34	34	31	28	

Besides the branches taught in the burgher schools already described, we have in this one technology, physics, and chemistry, and the number of hours attached to them in the foregoing table shows that they are actually taught to a considerable extent. These subjects are introduced, and at the same time the amount of study in the languages is increased, requiring an undue degree of labor of the classes, and dividing their attention among too many subjects. Thirty-eight hours of attendance on school per week is certainly too much to require.

* Includes orthography, 2 hours; grammar, 2 hours; exercises of style, 1 hour.

† Includes exercises of memory, 2 hours.

‡ Preparatory exercises.

§ Elements of form.

† The column of totals refers to the regular progression of five classes, and is obtained by doubling the numbers here given for the three elementary and two upper burgher school classes.

Latin is begun in the second elementary class, where the first rudiments of grammar are learned, and easy sentences translated. This course is continued in the next class. Those who intend to leave the school in the middle burgher school class, may be excused from attending the Latin lessons in the first.

The second class of the higher school read Cornelius Nepos, and the first Cæsar and Ovid. Their proficiency did not, however, seem to me to correspond at all with the number of hours devoted to this branch, viz., forty. The object of this instruction, for those who do not go to the gymnasium, is stated to be to enable them to pursue the science necessary to their callings, without embarrassment from the terms. I am of opinion that, in such a case, the system pursued in Mr. Wood's school, applied to learning the etymology of compound Latin words, and of the German words derived from the Latin, would answer the end better, with a less consumption of time; and if Latin is to be retained, the number of hours devoted to it in the Dorothean school, (thirty) or in the seminary school, (twenty-seven) seem much better suited to the object in view. I am induced to what may seem a tedious discussion of these programmes, because they afford different examples of primary instruction, the grade with which our college must begin, and we can not examine too carefully the subjects which should compose it, nor draw too largely upon experience in the details of arrangement.

French. This course does not differ materially from those already given. *Telemaachus* is used as a text-book. The time appropriated to the language appears sufficient, without being burthensome. Both the Latin and French being commenced in the second elementary class, which contains pupils who intend to leave school at the end of the "middle burgher school class year," it may be supposed that this time is thrown away, as very little proficiency can be made in so short a period; the force of this objection is, however, somewhat diminished by the fact, that the arrangement gives an opportunity for the development of a disposition for language which may warrant a change in the destination of the pupil.

In *arithmetic*, the lowest class is employed mainly in the mental exercises. After they have learned to make figures, they prepare written examples at home. In the next class, written arithmetic is combined with mental. The four ground rules are learned with abstract and concrete numbers. Preparatory exercises in fractions are taught. The first elementary class proceed as far as to include fractions, and a part of the class study proportions. The middle burgher school class pass on to decimal fractions and the square and cube root. The second burgher school class have their attention in these same parts of arithmetic directed to the technical applications, and besides, begin algebra, and proceed as far as simple equations. The first burgher school class extend their course of algebra through equations of the second and third degrees, progressions, and logarithms. Mercantile arithmetic also forms part of their course. These latter subjects, however, can in nowise be considered as belonging to primary instruction.

Geometry. Preparatory exercises of form, after the method of Pestalozzi, are taught in the elementary classes, and the higher ones proceed through the elements of geometry, and include mensuration and plane trigonometry. The head master has arranged, for the benefit of his pupils, a course containing the most important elements, and teaches also by lectures, which the pupils are required to write out. The time allotted to this subject is nearly double that of the seminary school, and I saw some reason to doubt the propriety of beginning the elementary exercises so early.

Knowledge of nature and art. The introduction to this subject, taught in the lowest two classes, is drawn from natural history, physical geography, and physics, and is made the means of inductive exercise. The recitations and conversation lectures which I heard, evidently interested the pupils, while they cultivated habits of reflection and observation. They are parallel with the lessons on objects of the English schools, being, however, more extended. The more systematic course of natural history of the higher classes, is like that of the seminary school. In summer the pupils make occasional excursions into the country, for practical exercise in this branch, under charge of a teacher; these excursions, if rightly improved, may be made also the means of cultivating proper relations between the pupil and teacher, but they are liable to abuse, and should be carefully attended to, in order to prevent such results. This school possesses a good

collection of plates of natural history,* and has the use of the museum of the trade school, which is under its roof.

The course of *technology*, intended to give a knowledge of the principal arts and their processes, lies open to the objection already urged, on the score of over-burthening the pupils with work. Such knowledge, as well as that of physics and chemistry, would be of service in after-life, but I do not see the possibility of teaching it, except in a mere outline, in a short course, and the time allotted appears to contemplate something more.

Geography. This course is begun with physical geography. The natural and artificial divisions of the world follow. Then the physical and political geography of Europe is taken up. The course of the upper or middle burgher school class terminates with that of Germany, and especially of the Mark of Brandenburg, and with a review of the whole. The second burgher school class has the same course with the middle class. The first takes up mathematical geography, and reviews physical geography more minutely, adding a knowledge of the climate, productions, commerce, manufactures, &c., of the countries studied. Maps are drawn, as an exercise, at home. This geographical course, which attaches every other part of the information to physical geography, appeared to me next in its success to the inductive plan already described. It is much facilitated by the use of raised maps, on which the natural features of the country strike the eye more forcibly than on a common map, where, if the physical details are given, the names and positions of the places, the boundaries, &c., are obscured by them.

The course of *history*, in the lower classes, is like that in the other schools. In the middle class the subject is reviewed, and the history of Germany, and especially that of Prussia, and of the Mark of Brandenburg is studied. The second higher burgher school class is taught an outline of ancient history, of that of the middle ages, and of later times, and then proceeds to the history of Germany and of Brandenburg. In the first class, the history of Germany, and of modern Europe in general, is continued.

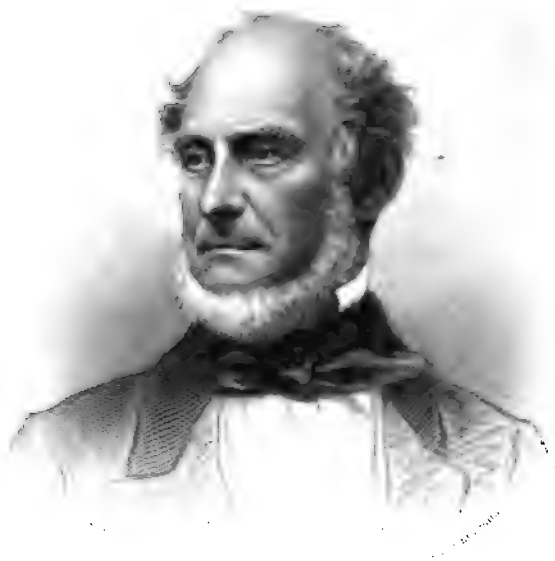
In the *mechanical branches*, the distribution of time agrees with that in the other schools, except in the number of hours allotted to writing, which is here twenty-eight, and in the Dorothean school but sixteen. *Vocal music* is taught by ear in the lower classes, and by note in the upper.

Physical education. There is an interval of a quarter of an hour in the middle of the morning, during which the pupils are free to take exercise, but there is no regular gymnastic or other exercise under the superintendence of the teachers.

It is obvious from what has been presented, that the elementary instruction requires raising to a higher level than at present, namely, to that of which an example has been given in the higher elementary school of Weissenfels. That then all pupils whose circumstances permit them to devote a longer time to education should pass to other schools, of a kind depending upon their destination in after-life, as determined by the circumstances of their parents and their own talents. The tone of these higher schools would, it appears, require to be varied according to the wants of the population among which they are placed, whether that of the country, of small towns, or of cities. In the cities, it has been seen that one class of burgher schools required is provided, and others will be described belonging more properly to a higher grade of instruction, upon the province of which, however, these latter decidedly trench. An example of a systematic arrangement appropriate to a city is afforded by the burgher school of Leipzig, presently to be described. Such a plan would, however, be inappropriate to a small town, where, of necessity, several schools must be united in one. In this case, it would require care to avoid the union of incompatible classes of pupils, causing mutual losses of time, and giving rise to defective habits of study. The same teachers should give instruction in the different departments of the school, in the same or kindred subjects, rather than to unite different classes. The pupil preparing for the gymnasium should not be called upon to study the natural sciences or mathematics which he will pursue there, and of which he does not feel the want for admission, nor the student who is to enter an architectural, commercial, or trade school, the classics which the gymnasial student requires for his admission.

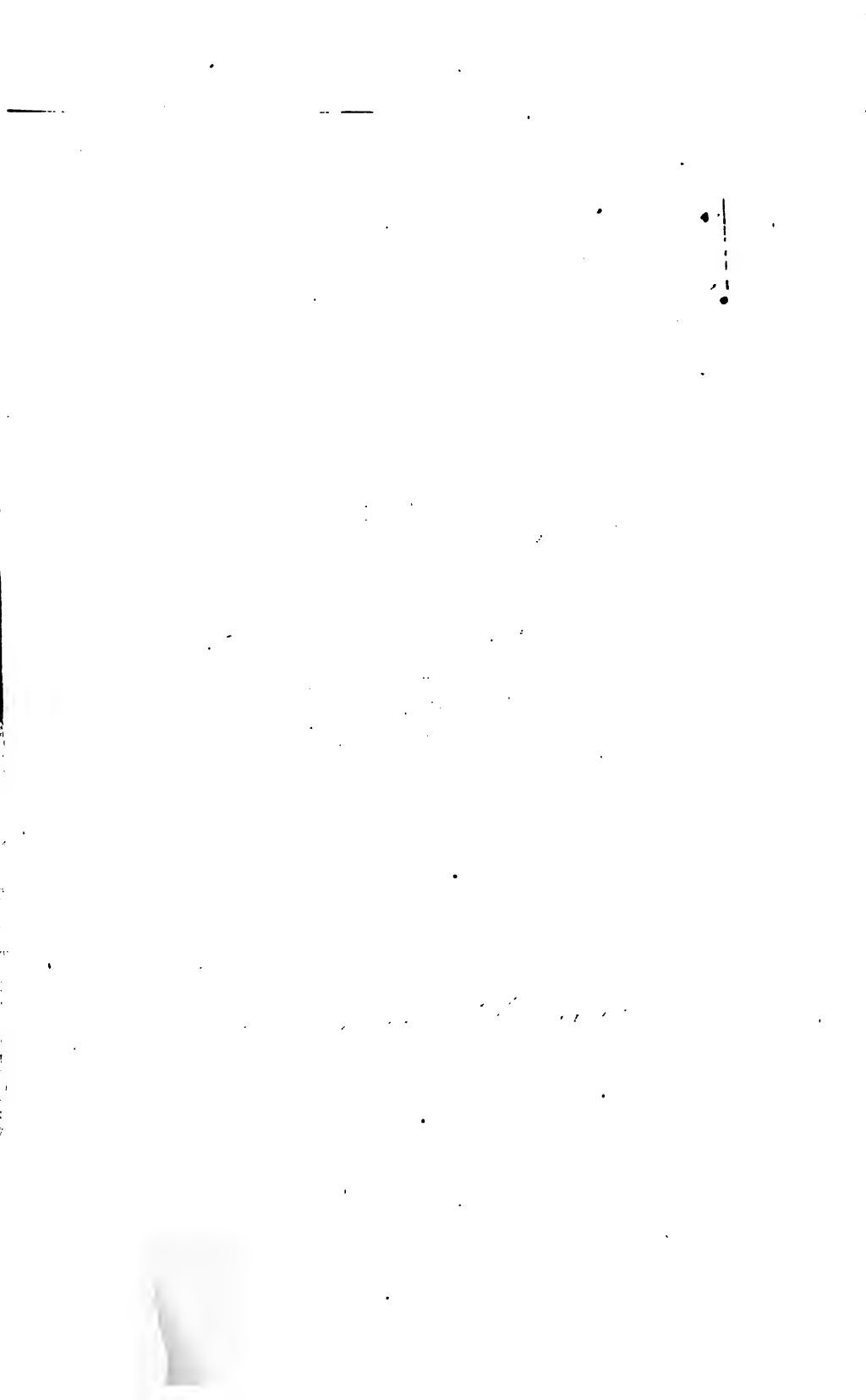
* By Fisher of Breslau.





Thomas Sherwin

It, near the Academy, since amply endowed by the Appeton family



VI. THOMAS SHERWIN.

THOMAS SHERWIN, for nearly thirty years head master of the English High School of Boston, was born at Westmoreland, a town on the banks of the Connecticut, in New Hampshire, on the 26th of March, 1799. His mother died when he was seven years of age, and soon after this sad event in his early life, he was placed in the family of a respectable physician, in the town of Temple, where he remained for seven years. This proved to be a good home for him. His advantages for schooling, however, were limited, being only such as the common "district school as it was" afforded during the winter months, if we except a few weeks' of attendance at a private school kept by Solomon P. Mills, then a member of the Dartmouth College, but at a subsequent period, principal of the institution over which Mr. Sherwin now presides. e/

But technical schooling is not the only means of education. A farm is an excellent school for a boy, if he is not kept too closely confined to its severe lessons in hard work. Fortunately for young Sherwin, the kind physician with whom he lived, cultivated a small farm, in connection with his professional practice, when his poorer patients often paid for the application of the forceps and lancet, by wielding the hoe and scythe. Such a place afforded no mean advantages for laying the foundation of a sound practical education. The boy of all work, now in the medical office, now in the field, and now in the saddle scouring the town to collect the doctor's bills, is not unfavorably situated for obtaining that acquaintance with the realities of life, and the habit of manly self-reliance which constitutes the essential basis of a right education.

Having enjoyed the training, and performed with fidelity the duties of this first sphere of activity, till the age of fourteen, he felt that it was time to begin to look about himself for something to do as a permanent occupation. To the boy who means to make something in the world, and who feels that he has every thing to do for himself, this is usually an anxious, and always a critical, period. The question was not decided at once. In the meantime he sojourns for a few months, under the immediate care of his father, at New Ipswich, N. H., near the Academy, since amply endowed by the Appleton family

and known by its name. We see now how the boy was father to the man, for he does not wait a day in idleness for something to turn up. At once he takes his seat in the academy, and applies himself to the problems in Adams' Arithmetic and the rules in Murray's Grammar. Though desirous of improving every opportunity for the acquisition of knowledge, his taste for learning was but partially developed, and the bright hope of one day rising to an intellectual pursuit, had not yet dawned upon his youthful vision. Nor was the formal, routine instruction which he there received, calculated to inspire him with a love of study. But the question—to him the all-important question—as to what he is to do was soon decided. The work of the head gave place to the work of the hands, and he was apprenticed to the clothier's trade, in Groton, Mass. This trade of fulling, dyeing and dressing the products of the domestic loom, has now almost ceased to exist among us; but at that time, the country being at war with Great Britain, and consequently deprived of the usual supply of foreign cloths, and while the woolen mill was unknown on this side of the Atlantic, it was important and remunerating.

The "ten hour system" had not been heard of, and the pressure of business made it necessary for him to make long days. He had few leisure hours, but those were well employed. His indenture provided that he should have eight weeks of schooling in each winter, and his growing desire for improvement, prompted him to exact every hour "nominated in the bond." As the germs of his character began to unfold themselves, it is not strange that some of his instructors discovered in the courteous, conscientious, clear-headed young apprentice, the elements of a superior man, and encouraged him to seek a higher education than the common school afforded. Three of the district school teachers who taught in the school when he attended, were men of some capacity, and subsequently rose to considerable eminence. Rev. Levi Leonard, D.D., late of Dublin, N. H., was one of them. This teacher led him to see with delight that arithmetic was a science as well as an art. Being already the best scholar in the school, he was, of course, highly commended by these teachers. Thus a school district reputation is achieved,—a small thing in itself, but important in its consequences. It greatly stimulated his youthful ambition, and we see plainly how in this case,

"Fame is the spur that the clear spirit doth raise."

Under such influences the apprentice gradually awoke to the life of the mind, and the aspiration for a collegiate education became a controlling motive. Some old Latin books were procured and studied without a teacher. The Latin Grammar was learned while tending the dressing machine, as Burritt learned his Greek Grammar at the forge.

Though, then and always loving and respecting manual labor, he came at length to feel that the handicraft which had been chosen in boyhood, was not to be his vocation. No sooner, therefore, was his apprenticeship terminated, after a service of nearly seven years, than he enters as an apprentice upon another work which is to be the great task of his life. He is now near his majority. A year and a half of close application, in teaching district schools in Harvard, Mass., and elsewhere, and in studying at the academies in New Ipswich and Groton, are passed, and he enters Harvard College in 1821, whence he was graduated among the first scholars of his class in 1825.

Wholly dependent upon his own exertions for support, he found it necessary to teach a winter school each year of his college course. Not only the vacation, but a part of term time was thus occupied. By this means he was kept in training for the profession to which he was unconsciously tending. From the outset, his success in the school-room was unquestionable. Even in this first period of his experience, he exhibited the rudiments of all those excellencies as an instructor by which he is now distinguished. He taught his pupils to think, and he was never satisfied unless they understood what they undertook to learn. At one time, having a class in astronomy, he constructed a globe for their use, and thus while teaching a branch of science, teaching also the greater lesson of conquering all difficulties.

It is greatly to Mr. Sherwin's credit, that notwithstanding the disadvantages under which he labored, he came out of college with an excellent standing as a scholar. Having taught the Lexington Academy for a year after his graduation, he received a gratifying testimonial of the high estimation in which he was held by the government of the college, in an invitation to take a tutorship in mathematics, which was accepted. Having discharged the duties of this office acceptably for a year, he resigned it, though solicited to retain it. For two years he had been favorably situated for improvement. While engaged in the instruction of others in the higher branches, he applied himself diligently in advancing his own scholarship. The cultivated circle in which he moved while tutor, no doubt, increased his love for intellectual pursuits. As yet, however, he had had no clear aim as to a profession. He had given some attention to the study of the law, which, doubtless, did something "to quicken and invigorate his understanding," but though pleased with its theory, as a mind of a judicial cast like his could not fail to be, its practice did not seem inviting enough to fix his choice upon it. At that time, in consequence of the great railway epoch which had just begun, the business of engineering was rapidly rising into importance. His thorough acquaintance with mathematical science, and his practical turn of mind,

were well calculated to insure success in this pursuit, and he entered upon it with zeal. His first practice was under Col. Laomi Baldwin, at the Navy Yard in Portsmouth and Charlestown. He then commenced the first survey for the Providence railroad, in connection with James Haywood. But after a few months' successful practice which seemed to give promise of rapid advancement to eminence in the profession, a severe illness, induced by exposures and hardships in the business, compelled him to relinquish it.

He was now in his twenty-eighth year. In the highest and best sense of the word, his life had been a success. Every thing he had undertaken, he had done well. A masterly thoroughness marked every work to which he put his hand. Fidelity to duty was his guiding principle. By patient perseverance, he had achieved a liberal culture of mind and character. He had made himself a man of the best type, intellectually and morally. He had laboriously prepared himself for a life of usefulness, and just as he had begun to feel that he had found his sphere of activity, his expectations were cut off. The pulmonary symptoms which followed the acute attack, were such as to lead him to expect an early termination of his life. But he could not be idle. He resolved to devote the portion of life which might be spared to him, to the business of teaching. With this object in view, he opened a private school in Boston. He thus patiently and courageously put on the harness in which he expected soon to fall. How little did he then dream, when commencing that school with but one pupil, that he was entering upon the career for which all his antecedents had been a fit preparation, and in which he was destined to furnish the noblest example of his day! Scarcely a year had been occupied in this private academy, which soon became remunerative, when he was solicited to take the post of sub-master in the Boston English High School, which was then under the mastership of Mr. Mills, a teacher of singular accomplishments, who had been his instructor in childhood, and subsequently his tutor in college. This place he accepted, and entered upon its duties in 1828.

Here he had still another apprenticeship to serve—a fortunate one, too, as each of the preceding had been—of ten years under one of the most extraordinary teachers that America has produced. On the resignation of the principal, in 1838, Mr. Sherwin was elected to the place by an unanimous vote, and he has held it to the present time, with constantly increasing reputation, and constantly increasing merit. His official title is Master, and in this case the title has a meaning. He is a master, not indeed in the sense of tyrant or despot, nor merely in that of chief or head of an institution, but he is a master in the sense of one eminently skilled in his profession—a master of his bus-

iness. Let the young and aspiring teacher remember that this true master *served up* to his mastership.

The English High School in Boston, was established by the town, in 1821, for the purpose of furnishing young men, not intended for a college course, with the means of obtaining such an education in the higher English branches, and in some of the modern languages, as should fit them for higher departments of commercial, manufacturing, and mechanical business. The prescribed course of study is arranged for three years, with the privilege of an advanced course of one year, embracing the French and Spanish languages, physics, mathematics, pure and applied, mental and moral science, rhetoric, general history, and ancient geography. For youths not destined for learned professions, the training imparted here is, probably, quite equal to that afforded by any of our colleges, and the tuition being free to all residents of the city, it is emphatically the people's college.

This is the institution to which Mr. Sherwin has already devoted more than thirty years of his life, having occupied the post of principal for twenty-two years. His evident fitness for the duties of such a place drew him into it; and from the beginning of his service in it, his influence and his reputation have steadily risen together. His extreme modesty has claimed no credit. He has been content to do his duty, caring only for that fame which follows, not for that which is sought. Such a man is rarely appreciated fully in his own day. The life of such a man is a study which will richly reward any one, especially the teacher.

The writer of this sketch has had ample opportunities for observing his professional life, and he has found him thorough and practical in all his methods; paternal, yet firm in his discipline; placing the development of character above mere scholarship, and yet demanding high scholarship, in both respects furnishing in himself a model worthy of imitation; neglecting no essential branch, and pushing none into undue prominence; while imparting knowledge from his copious storehouse of learning, so imparting it as to stimulate the desire for more, and lead his pupils into the path of self-culture; and administering the affairs of the school with such justice, such kindness and such courtesy, as to win the affection of his pupils and co-laborers. These, in general terms, are some of the characteristics by which he has at length risen to his present eminence, and come to merit the title of the representative American public school teacher.

There is no room here for details, but there is one element in his theory of education which is too important to be wholly omitted. It is his thorough conviction of the superior utility of a few branches thoroughly mastered, over an extended course superficially studied.

Hence, in his practice he has acted in the spirit of the maxim, "*Multum non multa*." He has steadily set his face against the tendency which has been too prevalent, to introduce into schools for youth, a multitudinous array of those studies which have been called the *osophies and ologies*. He has aimed at thoroughness and depth of culture, rather than an extensive show of top dressing. The results of his system fully justify its wisdom. The High School pupils who have completed the course, are among the brightest ornaments of the city. It was in reference to the thoroughness of the teaching in the High School, that Tillinghast said West Point was the best place in the country to get an education, and the High School in Boston the next.

Besides his direct labors as a teacher, he has rendered much valuable service to the cause of education and of science. In 1830, the American Institute of Instruction was established by teachers and friends of education, to promote the cause of popular education by diffusing useful knowledge concerning it. Mr. Sherwin was one of the originators of this parent educational association, for nearly thirty years has been one of its working officers, and was its president for the years 1853 and 1854. In 1834, he delivered a lecture before it on "Teaching mathematics;" and in 1848, on "Example in Teaching," a subject which his own professional life admirably illustrates. At the annual meeting in 1856, he presented an able and elaborate paper on the "Relative advantages of Scientific and Classical Studies," which was published in the Institute volume for the year.

Mr. Sherwin was one of the foremost in the work of organizing the Massachusetts State Teachers' Association, in 1845. He was its first vice-president, and third president. He has delivered several valuable lectures before it, and he has never shrunk from any labor which its interests have demanded.

In 1847, this association undertook to establish a purely educational journal as its organ, the first project of the kind attempted in this country. The result of the enterprise, was the publication of the "*Massachusetts Teacher*," which has now reached its thirteenth volume, and which has exerted a powerful influence for the promotion of sound education, not only in the state of Massachusetts, but elsewhere, as it is read, more or less in nearly every state in the Union. As one of the original editors, and a member of the publishing committee who had in charge its business affairs, Mr. Sherwin contributed very materially to its success, in the face of many discouraging obstacles. For a number of years, at intervals, he was a member of the editorial corps. For several years past, he has had charge of the mathematical department.

He was early elected a member of the American Academy of Arts and Sciences. He has written two original mathematical works, his "*Elements of Algebra*," and his "*Common School Algebra*," both excellent works of their class; and in connection with Mr. Mills, he prepared for publication a valuable volume of mathematical tables.

Nothing which we can write would afford the reader as good an idea of the motives and aims, and of the earnestness of purposes which have characterized his professional career, as a brief article from his pen, in the first number of the "*Massachusetts Teacher*" which he edited, and which we quote entire.

CONSOLATIONS IN TEACHING.

Amidst all the difficulties with which the instructor has to contend, there is much to alleviate his burdens, much to cheer him in his troubles and perplexities, much to encourage him in his exertions. True, he is subject to the contempt of the ignorant aristocrat, the contumely of the purse-proud millionaire, and the neglect of the ambitious politician. He can rarely aspire to the honors of office, or to the ease and luxuries of wealth. But, at such apparently disheartening circumstances, sound philosophy and genuine philanthropy only smile.—There is a luxury in doing good, which abundantly compensates for many deprivations.

The principal enemies against which the instructor has to combat, are vice and ignorance. He is, therefore, never called upon to battle in an unjust cause. He never has to defend the wrong in opposition to the right, and his most efficient weapon are bloodless arrows. Aloof from the turmoil of political strife, beyond the influence of that most bewitching and most deceitful of syrens, ambition for political distinction, and rarely jaundiced by inordinate thirst for gold, he is comparatively removed from the temptations to which some other classes of men are exposed. The legitimate object of his exertions, the end of his proper aspirations, is, to impart and develop the good and the true, to repress and correct the evil and the false, to make mankind wiser, purer, truer, holier. What a glorious goal for ambition, purified from its gross and poisonous elements?

The materials, too, placed in the teacher's hands—what are they? Immortal minds, in their nascent and most pliant state, ready to be molded into forms of undying beauty and perfection, or distorted into shapes of hideous and ever-during ugliness. The sculptor fashions the inanimate marble into the "counterfeit presentment" of a man, while he who converts an ignorant and vicious child into a well-informed and virtuous citizen, creates, it may be said, the real man himself. The instructions, admonitions, and exhortations of the clergyman, too often fall ineffectively upon the indurated heart of the adult, and not unfrequently are too general and comprehensive to reach the feeble understanding of the young. But the intelligent, kind-hearted, and devoted teacher can adapt his instructions to the comprehension and affections of his tender and flexible charge. Here, then, is a field worthy of the highest efforts of the wisest and most skillful husbandman.

Besides, how cheering to the teacher are the subsequent success and respectability of his pupils. To possess sensible evidence that we have been instrumental in sending out into the world men and women who are an ornament to their country and a blessing to their race, is surely no slight compensation for the anxieties we may have suffered, the toils we may have endured, and the patience and perseverance we may have exercised. To feel that we have rescued even one individual from a life of ignorance and vice, or from an ignominious or premature death, is more true and lasting glory than to have won a crown. And then the gratitude cherished by his pupils throughout life, toward a faithful and capable instructor, comes to his heart like refreshing dew-drops.

Finally, the teacher's vocation is becoming more and more highly appreciated; and he himself, as he improves in character and knowledge, and fulfills more faithfully and efficiently the sacred charge intrusted to him, attains to increased respect, and a higher remuneration for his services.

With such motives to cheerfulness and energetic exertion, let no teacher de-

spair; let none despise or slight his calling; for even the humble and obscure guide of the lowest grade of children, may be accomplishing the true purposes of life far more perfectly, than he who rides victorious over conquered nations, or he who sits in jeweled majesty, sovereign over the richest and broadest domains.

Mr. Sherwin wrote an admirable article for the first volume of the "*Massachusetts Teacher*," entitled "How shall a Teacher keep himself Young?" We can now see plainly the significance of that paper. We can put full confidence in its views, since the writer has now proved that he knows how to keep himself young. His sympathies with the young are still fresh. There is nothing antiquated about him. He exhibits the remarkable phenomenon of a teacher at the age of sixty, who combines with the wisdom and experience of age, the buoyancy and vigor of youth, like the tropical fruit-tree bearing upon its branches at the same time the ripened fruit and the opening blossoms.

Thus he has labored, manfully making the most and the best of everything, steadily cultivating and improving his own mind and character, and doing what he could for the improvement of the lot of others. In his whole career he has served and adorned the cause of the public school teacher, of which class, more than any living man, in active service, he is now justly regarded as the representative and head.

We have attempted to present nothing more than his life as a teacher, but in conclusion, it is proper to say that his life has been equally praiseworthy in all the other relations he has sustained, as son, brother, husband, father, citizen, and friend.

VII. THE SCHOOL AND THE TEACHER IN LITERATURE.

WILLIAM COWPER. 1731—1796.

WILLIAM COWPER,* the most popular poet of his generation and the best of English letter-writers was the son of Rev. John Cowper, D.D., rector of Great Barkhamstead, Herts, and was born at the parsonage house in 1731. His mother died when he was six years old, and her sweet presence, and his happy childhood, he has embalmed forever in the "Lines" suggested by his mother's picture, a gift from his cousin later in life.

"Oh that those lips had language! Life has pass'd
With me but roughly since I heard thee last.
Those lips are thine—thy own sweet smile I see,
The same that oft in childhood solaced me;
Voice only fails, else how distinct they say,
'Grieve not, my child, chase all thy fears away!'

* * * * *
My mother! when I learn'd that thou wast dead,
Say, wast thou conscious of the tears I shed?
I heard the bell toll'd on thy burial day,
I saw the hearse that bore thee slow away,
And, turning from my nursery window, drew
A long, long sigh, and wept a last adieu!
But was it such?—It was.—Where thou art gone,
Adieus and farewells are a sound unknown.
May I but meet thee on that peaceful shore,
The parting word shall pass my lips no more!
Thy maidens, grieved themselves at my concern,
Oft gave me promise of thy quick return.
What ardently I wish'd, I long believed,
And, disappointed still, was still deceived.
By expectation every day beguiled,
Dope of to-morrow even from a child.
Thus many a sad to-morrow came and went,
Till, all my stock of infant sorrows spent,
I learn'd at last submission to my lot,
But, though I less deplored thee, ne'er forgot.

Where once we dwell our name is heard no more.
Children not thine have trod my nursery floor.
And where the gardener Robin, day by day,
Drew me to school along the public way,
Delighted with my bauble coach, and wrapp'd
In scarlet mantle warm, and velvet-capp'd,
'Tis now become a history little known,
That once we call'd the pastoral house our own.
Short-lived possession! but the record fair,
That memory keeps of all thy kindness there,
Still outlives many a storm, that has effaced
A thousand other themes less deeply traced.
Thy nightly visits to my chamber made,
That thou might'st know me safe and warmly hid;

* This sketch is taken substantially from Timb's "*School-days of Eminent Men.*"

Thy morning bounties ere I left my home,
 The biscuit, or confectionery plum ;
 The fragrant waters on my cheeks bestow'd
 By thy own hand, till fresh they shone and glow'd :
 All this, and more endearing still than all,
 Thy constant flow of love, that knew no fall,
 Ne'er roughen'd by those cataracts and breaks,
 That humor interposed too often makes ;
 All this still legible in memory's page,
 And still to be so to my latest age,
 Adds joy to duty, makes me glad to pay
 Such honors to thee as my numbers may
 Perhaps a frail memorial, but sincere,
 Not scorn'd in heaven, though little noticed here."

In the year of his mother's death, he was, as he himself describes it, "taken from the nursery, and from the immediate care of a most indulgent mother," and sent out of his father's house to a considerable school kept by a Dr. Pitman, at Market-street. Here for two years he suffered much from ill-treatment by his rough companions: his sensibility and delicate health were the objects of their cruelty and ridicule; and one boy so relentlessly persecuted him that he was expelled, and Cowper was removed from the school. Cowper retained in late years a painful recollection of the terror with which this boy inspired him. "His savage treatment to me," he says, "impressed such a dread of his figure on my mind, that I well remember being afraid to lift my eyes upon him higher than his knees; and that I knew him better by his shoe-buckle than by any other part of his dress." To the brutality of this boy's character, and the general impression left upon Cowper's mind by the tyranny he had undergone at Dr. Pitman's, may be traced Cowper's prejudice against the whole system of public education, so forcibly expressed in his poem called "*Tirocinium; or, a Review of Schools.*"

About this time Cowper was attacked with an inflammation in the eyes, and was placed in the house of an oculist, where he remained two years, and was but imperfectly cured.

At the end of this time, at the age of ten, he was removed to Westminster School. The sudden change from the isolation of the oculist's house to the activity of a large public school, and the collision with its variety of characters and tempers, helped to feed and foster the moods of dejection to which Cowper was subject. His constitutional despondency was deepened by his sense of solitude in being surrounded by strangers; and thus, thrown in upon himself, he took refuge in brooding over his spiritual condition. This tendency had first manifested itself at Dr. Pitman's school, and next at Westminster. Passing one evening through St. Margaret's churchyard, he saw a light glimmering at a distance from the lantern of a grave-digger, who, as Cowper approached, threw up a skull that struck

him on the leg. "This little incident," he observes, "was an alarm to my conscience; for the event may be remembered among the best religious documents I received at Westminster." He sought hope in religious consolations, and then hopelessly abandoned them; and he was struck with lowness of spirits, and intimations of a consumptive habit, which the watchful sympathies of home might possibly have averted or subdued.

Nevertheless, Cowper appears to have been sufficiently strong and healthy to excel at cricket and football; and he persevered so successfully in his studies, that he stood in high favor with the master for his scholarship. Looking back many years afterward on this part of his life, he only regretted the lack of his religious instruction. Latin and Greek, he complains, were all that he acquired. The duty of the school-boy absorbed every other, with the single exception of the periodical preparations for confirmation, to which we find this interesting testimony in his Letters:

"That I may do justice to the place of my education, I must relate one mark of religious discipline, which, in my time, was observed at Westminster; I mean the pains which Dr. Nichols took to prepare us for confirmation. The old man acquitted himself of this duty like one who had a deep sense of its importance; and I believe most of us were struck by his manner, and affected by his exhortations."

Cowper translated twenty of Vinny Bourne's poems into English, and his allusions to his old favorite usher of the fifth form at Westminster are frequent.*

"I remember (says Cowper) seeing the Duke of Richmond set fire to Vinny's greasy locks, and box his ears to put it out again." And again writing to Mr. Rose, Cowper says: "I shall have great pleasure in taking now and then a peep at my old friend, Vincent Bourne; the neatest of all men in his vocation, though, when I was under his ushership at Westminster, the most slovenly in his person. He was so inattentive to his boys, and so indifferent whether they brought good or bad exercises, or none at all, that he seemed determined, as he was the best, so he should be the last, Latin poet of the Westminster line; a plot, which I believe he exercised very successfully; for I have not heard of any one who has at all deserved to be compared with him." Even in the time of his last illness, we find that Cowper's dreary thoughts were, for the moment, charmed away by the poems of his old favorite, Vincent Bourne.

* Vincent or Vinny Bourne, the elegant Latin poet and usher of Westminster School, where he was educated, died in 1747. Cowper has left also this feeling tribute to his old tutor:—

"I love the memory of Vinny Bourne. I think him a better Latin poet than Tibullus, Propertius, Ausonius, or any of the writers in *his* way, except Ovid, and not at all inferior to him. . . . It is not common to meet with an author who can make you smile, and yet at nobody's expense; who is always entertaining, and yet always harmless; and who, though always elegant, and classical in a degree not always found even in the classics themselves, charms more by the simplicity and playfulness of his ideas than by the neatness and purity of his verse: yet such was poor Vinny."

TIROCINIUM; OR, A REVIEW OF SCHOOLS.*

But the principal thing is, the right education of youth.—*Plato.*

The basis of every state is, the education of the young.—*Diog. Laert.*

TO THE REV. WILLIAM CAWTHORNE UNWIN,

RECTOR OF STOCK IN ESSEX, THE TUTOR OF HIS TWO SONS, THE FOLLOWING POEM, RECOMMENDING PRIVATE TUITION IN PREFERENCE TO AN EDUCATION AT SCHOOL, IS INSCRIBED, BY HIS AFFECTIONATE FRIEND,

Olney, Nov. 6, 1784.

WILLIAM COWPER.

It is not from his form in which we trace
Strength join'd with beauty, dignity with grace,
That man, the master of this globe, derives
His right of empire over all that lives.
That form, indeed, the associate of a mind
Vast in its powers, ethereal in its kind,
That form, the labour of Almighty skill,
Framed for the service of a freeborn will,
Asserts precedence, and bespeaks control,
But borrows all its grandeur from the soul.
Hers is the state, the splendour, and the throne,
An intellectual kingdom, all her own.
For her the memory fills her ample page
With truths pour'd down from every distant age;
For her amasses an unbounded store,
The wisdom of great nations, now no more;
Though laden, not encumber'd with her spoil;
Laborious, yet unconscious of her toil;
When copiously supplied, then most enlarged;
Still to be fed, and not to be surcharged.
For her the Fancy, roving unconfined,
The present muse of every pensive mind,
Works magic wonders, adds a brighter hue
To nature's scenes than Nature ever knew.
At her command winds rise and waters roar,
Again she lays them slumbering on the shore;
With flower and fruit the wilderness supplies,
Or bids the rocks in ruder pomp arise.
For her the Judgment, umpire in the strife
That Grace and Nature have to wage through life,
Quick-sighted arbiter of good and ill,
Appointed sage preceptor to the Will,

* In this poem the author would be very sorry to stand suspected of having aimed his censure at any particular school. His objections are such as naturally apply themselves to schools in general. If there were not, as for the most part there is, willful neglect in those who manage them, and an omission even of such discipline as they are susceptible of, the objects are yet too numerous for minute attention: and the aching hearts of ten thousand parents, mourning under the bitterness of all disappointments, attest the truth of the allegation. His quarrel, therefore, is with the mischief at large, and not with any particular instance of it.—*Original Preface.*

Condemns, approves, and with a faithful voice
Guides the decision of a doubtful choice.

Why did the fiat of a God give birth
To you fair Sun and his attendant Earth?
And, when descending he resigns the skies,
Why takes the gentler Moon her turn to rise,
Whom Ocean feels through all his countless waves
And owns her power on every shore he leaves?
Why do the seasons still enrich the year,
Fruitful and young as in their first career?
Spring hangs her infant blossoms on the trees,
Rock'd in the cradle of the western breeze;
Summer in haste the thriving charge receives
Beneath the shade of her expanded leaves,
Till Autumn's fiercer heats and plenteous dews
Dye them at last in all their glowing hues.—
'Twere wild profusion all, and bootless waste,
Power misemploy'd, munificence misplaced,
Had not its Author dignified the plan,
And crown'd it with the majesty of man.
Thus form'd, thus placed, intelligent, and taught,
Look where he will, the wonders God has wrought,
The wildest scorner of his Maker's laws
Finds in a sober moment time to pause,
To press the important question on his heart,
"Why form'd at all, and wherefore as thou art?"
If man be what he seems, this hour a slave,
The next mere dust and ashes in the grave;
Endued with reason only to decry
His crimes and follies with an aching eye;
With passions, just that he may prove, with pain,
The force he spends against their fury vain;
And if, soon after having burnt, by turns,
With every lust with which frail Nature burns,
His being end where death dissolves the bond,
The tomb take all, and all be blank beyond;
Then he, of all that Nature has brought forth,
Stands self-impeach'd the creature of least worth,
And, useless while he lives, and when he dies,
Brings into doubt the wisdom of the skies.

Truths that the learn'd pursue with eager thought
Are not important always as dear-bought,
Proving at last, though told in pompous strains,
A childish waste of philosophic pains;
But truths on which depends our main concern,
That 'tis our shame and misery not to learn,
Shine by the side of every path we tread
With such a luster, he that runs may read.
'Tis true that, if to trifle life away
Down to the sunset of their latest day,
Then perish on futurity's wide shore
Like fleeting exhalations, found no more,
Were all that heaven required of human kind,
And all the plan their destiny design'd,
What none could reverence all might justly blame,
And man would breathe but for his Maker's shame.

But reason heard, and nature well perused,
 At once the dreaming mind is disabused.
 If all we find possessing earth, sea, air,
 Reflect his attributes who placed them there,
 Fulfil the purpose, and appear design'd
 Proofs of the wisdom of the all-seeing mind,
 'Tis plain the creature, whom he chose to invest
 With kingship and dominion o'er the rest,
 Received his nobler nature, and was made
 Fit for the power in which he stands arrayed;
 That first, or last, hereafter, if not here,
 He too might make his author's wisdom clear,
 Praise him on earth, or obstinately dumb,
 Suffer his justice in a world to come.
 This once believed, 'twere logic misapplied
 To prove a consequence by none denied,
 That we are bound to cast the minds of youth
 Betimes into the mould of heavenly truth,
 That taught of God they may indeed be wise,
 Nor ignorantly wandering miss the skies.

In early days the conscience has in most
 A quickness, which in later life is lost:
 Preserved from guilt by salutary fears,
 Or guilty soon relenting into tears.
 Too careless often, as our years proceed,
 What friends we sort with, or what books we read,
 Our parents yet exert a prudent care
 To feed our infant minds with proper fare;
 And wisely store the nursery by degrees
 With wholesome learning, yet acquired with ease.
 Neatly secured from being soil'd or torn
 Beneath a pane of thin translucent horn,
 A book (to please us at a tender age
 'Tis call'd a book, though but a single page)
 Presents the prayer the Saviour deign'd to teach,
 Which children use, and parsons—when they preach.
 Larding our syllables, we scramble next
 Through moral narrative, or sacred text;
 And learn with wonder how this world began,
 Who made, who marr'd, and who has ransom'd man:
 Points which, unless the Scripture made them plain,
 The wisest heads might agitate in vain.
 O thou, whom, borne on Fancy's eager wing
 Back to the season of life's happy spring,
 I pleased remember, and, while memory yet
 Holds fast her office here, can ne'er forget;
 Ingenious dreamer, in whose well-told tale
 Sweet fiction and sweet truth alike prevail;
 Whose humorous vein, strong sense, and simple style
 May teach the gayest, make the gravest smile;
 Witty, and well employ'd, and, like thy Lord,
 Speaking in parables his slighted word;
 I name thee not, lest so despised a name
 Should move a sneer at thy deserved fame;
 Yet e'en in transitory life's late day,
 That mingles all my brown with sober gray,

Revere the man whose PILGRIM marks the road,
 And guides the PROGRESS of the soul to God.
 'Twere well with most, if books that could engage
 Their childhood pleased them at a riper age;
 The man, approving what had charm'd the boy,
 Would die at last in comfort, peace, and joy,
 And not with curses on his heart, who stole
 The gem of truth from his unguarded soul.
 The stamp of artless piety, impress'd
 By kind tuition on his yielding breast,
 The youth, now bearded and yet pert and raw,
 Regards with scorn, though once received with awe;
 And warp'd into the labyrinth of lies,
 That babblers, call'd philosophers, devise,
 Blasphemes his creed, as founded on a plan
 Replete with dreams, unworthy of a man.
 Touch but his nature in its ailing part,
 Assert the native evil of his heart,
 His pride resents the charge, although the proof*
 Rise in his forehead, and seem rank enough:
 Point to the cure, describe a Saviour's cross
 As God's expedient to retrieve his loss,
 The young apostate sickens at the view,
 And hates it with the malice of a Jew.

How weak the barrier of mere nature proves,
 Opposed against the pleasures Nature loves!
 While self-betray'd, and willfully undone,
 She longs to yield, no sooner woo'd than won.
 Try now the merits of this blest exchange
 Of modest truth for wit's eccentric range.
 Time was, he closed as he began the day,
 With decent duty, not ashamed to pray;
 The practice was a bond upon his heart,
 A pledge he gave for a consistent part;
 Nor could he dare presumptuously displease
 A power, confess'd so lately on his knees.
 But now farewell all legendary tales,
 The shadows fly, philosophy prevails;
 Prayer to the winds, and caution to the waves;
 Religion makes the free by nature slaves.
 Priests have invented, and the world admired
 What knavish priests promulgate as inspired,
 Till Reason, now no longer overawed,
 Resumes her powers, and spurns the clumsy fraud;
 And, common sense diffusing real day,
 The meteor of the Gospel dies away.
 Such rhapsodies our shrewd discerning youth
 Learn from expert inquirers after truth;
 Whose only care, might truth presume to speak,
 Is not to find what they profess to seek.
 And thus, well tutor'd only while we share
 A mother's lectures and a nurse's care;
 And taught at schools much mythologic stuff,†
 But sound religion sparingly enough;

* See 2 Chron. xxvi. 19.

† The author begs leave to explain.—Sensible that, without such knowledge, neither the an-

Our early notices of truth, disgraced,
 Soon loose their credit, and are all effaced.
 Would you your son should be a sot or dunce,
 Lascivious, headstrong, or all these at once ;
 That in good time the stripling's finish'd taste
 For loose expense and fashionable waste
 Should prove your ruin, and his own at last ;
 Train him in public with a mob of boys,
 Childish in mischief only and in noise,
 Else of a mannish growth, and five in ten
 In infidelity and lewdness men.
 There shall he learn, ere sixteen winters old,
 That authors are most useful pawn'd or sold ;
 That pedantry is all that schools impart,
 But taverns teach the knowledge of the heart ;
 There waiter Dick, with bacchanalian lays,
 Shall win his heart, and have his drunken praise,
 His counsellor and bosom friend shall prove,
 And some street-pacing harlot his first love.
 Schools, unless discipline were doubly strong,
 Detain their adolescent charge too long ;
 The management of tiros of eighteen
 Is difficult, their punishment obscene.
 The stout tall captain, whose superior size
 The minor heroes view with envious eyes,
 Becomes their pattern, upon whom they fix
 Their whole attention, and ape all his tricks.
 His pride, that scorns to obey or to submit,
 With them is courage ; his effrontery wit.
 His wild excursions, window-breaking feats,
 Robbery of gardens, quarrels in the streets,
 His hairbreadth 'scapes, and all his daring schemes,
 Transport them, and are made their favourite themes.
 In little bosoms such achievements strike
 A kindred spark : they burn to do the like.
 Thus, half accomplish'd ere he yet begin
 To show the peeping down upon his chin ;
 And, as maturity of years comes on,
 Made just the adept that you design'd your son ;
 To ensure the perseverance of his course,
 And give your monstrous project all its force,
 Send him to college. If he there be tamed,
 Or in one article of vice reclaim'd,
 Where no regard of ordinances is shown
 Or look'd for now, the fault must be his own.
 Some sneaking virtue lurks in him no doubt,
 Where neither strumpets' charms, nor drinking bout,
 Nor gambling practices can find it out.
 Such youths of spirit, and that spirit too,
 Ye nurseries of our boys, we owe to you :
 Though from ourselves the mischief more proceeds,
 For public schools 'tis public folly seeds,

cient poets nor historians can be tasted, or indeed understood, he does not mean to censure
 the pains that are taken to instruct a schoolboy in the religion of the heathen, but merely
 that neglect of Christian culture which leaves him shamefully ignorant of his own.

The slaves of custom and establish'd mode,
 With packhorse constancy we keep the road,
 Crooked or straight, through quags or thorny dells,
 True to the jingling of our leader's bells.
 To follow foolish precedents, and wink
 With both our eyes, is easier than to think :
 And such an age as our's balks no expense,
 Except of caution and of common sense ;
 Else sure notorious fact, and proof so plain,
 Would turn our steps into wiser train.
 I blame not those who, with what care they can,
 O'erwatch the numerous and unruly clan ;
 Or, if I blame, 'tis only that they dare
 Promise a work of which they must despair.
 Have ye, ye sage intendants of the whole,
 A ubiquitous presence and control,
 Elisha's eye, that, when Gehazi stray'd,
 Went with him, and saw all the game he play'd ?
 Yes—ye are conscious ; and on all the shelves
 Your pupils strike upon have struck yourselves.
 Or if, by nature sober, ye had then,
 Boys as ye were, the gravity of men,
 Ye knew at least, by constant proofs address'd
 To ears and eyes, the vices of the rest.
 But ye connive at what ye cannot cure,
 And evils not to be endured endure,
 Lest power exerted, but without success,
 Should make the little ye retain still less.
 Ye once were justly famed for bringing forth
 Undoubted scholarship and genuine worth ;
 And in the firmament of fame still shines
 A glory, bright as that of all the signs,
 Of poets raised by you, and statesmen, and divines.
 Peace to them all ! those brilliant times are fled,
 And no such lights are kindling in their stead.
 Our striplings shine indeed, but with such rays
 As set the midnight riot in a blaze ;
 And seem, if judged by their expressive looks,
 Deeper in none than in their surgeons' books.

Say, muse, (for education made the song,
 No muse can hesitate, or linger long.)
 What causes move us, knowing, as we must,
 That these *mnageries* all fail their trust,
 To send our sons to scout and scamper there,
 While colts and puppies cost us so much care !

Be it a weakness, it deserves some praise,
 We love the play-place of our early days ;
 The scene is touching, and the heart is stone
 That feels not at that sight, and feels at none.
 The wall on which we tried our graving skill,
 The very name we carved subsisting still ;
 The bench on which we sat while deep employ'd,
 Though mangled, hack'd, and hew'd, not yet destroy'd ;
 The little ones, unbutton'd, glowing hot,
 Playing our games, and on the very spot ;

As happy as we once, to kneel and draw
 The chalky ring, and knuckle down at taw;
 To pitch the ball into the grounded hat,
 Or drive it devious with a dextrous pat;
 The pleasing spectacle at once excites
 Such recollections of our own delights,
 That, viewing it, we seem almost to obtain
 Our innocent sweet simple years again.
 This fond attachment to the well-known place,
 Whence first we started into life's long race,
 Maintains its hold with such unfailing sway,
 We feel it e'en in age, and at our latest day.
 Hark! how the sire of chits, whose future share
 Of classic food begins to be his care,
 With his own likeness placed on either knee,
 Indulges all a father's heartfelt glee;
 And tells them, as he strokes their silver locks,
 That they must soon learn Latin, and to box;
 Then turning, he regales his listening wife
 With all the adventures of his early life;
 His skill in coachmanship, or driving chaise,
 In bilking tavern-bills, and spouting plays;
 What shifts he used, detected in a scrape,
 How he was flogg'd, or had the luck to escape;
 What sums he lost at play, and how he sold
 Watch, seals, and all—till all his pranks are told.
 Retracing thus his frolics, ('tis a name
 That palliates deeds of folly and of shame,)
 He gives the local bias all its sway;
 Resolves that where he play'd, his sons shall play,
 And destines their bright genius to be shown
 Just in the scene where he display'd his own.
 The meek and bashful boy will soon be taught
 To be as bold and forward as he ought;
 The rude will scuffle though with ease enough,
 Great schools suit best the sturdy and the rough.
 Ah, happy designation, prudent choice,
 The event is sure; expect it, and rejoice!
 Soon see your wish fulfill'd in either child,
 The pert made perter, and the tame made wild.

The great indeed, by titles, riches, birth,
 Excused the encumbrance of more sordid worth,
 Are best disposed of where with most success
 They may acquire that confident address,
 Those habits of profuse and lewd expense,
 That scorn of all delights but those of sense,
 Which, though in plain plebians we condemn,
 With so much reason, all expect from them.
 But families of less illustrious fame,
 Whose chief distinction is their spotless name,
 Whose heirs, their honours none, their income small,
 Must shine by true desert, or not at all,
 What dream they of, that, with so little care
 They risk their hopes, their dearest treasure, there?
 They dream of little Charles or William graced
 With wig prolix, down flowing to his waist;

COWPER'S TIROCIINIUM; OR, A REVIEW OF SCHOOLS.

They see the attentive crowds his talents draw,
They hear him speak—the oracle of law.
The father, who designs his babe a priest,
Dreams him episcopally such at least ;
And, while the playful jockey scours the room
Briskly, astride upon the parlour broom,
In fancy sees him more superbly ride
In coach with purple lined, and mitres on its side.
Events improbable and strange as these,
Which only a parental eye foresees,
A public school shall bring to pass with ease.
But how ? resides such virtue in that air,
As must create an appetite for prayer ?
And will it breathe into him all the zeal
That candidates for such a prize should feel,
To take the lead and be the foremost still
In all true worth and literary skill ?
“ Ah, blind to bright futurity, untaught
The knowledge of the World, and dull of thought !
Church-ladders are not always mounted best
By learned clerks and Latinists profess'd.
The exalted prize demands an upward look,
Not to be found by poring on a book.
Small skill in Latin, and still less in Greek,
Is more than adequate to all I seek.
Let erudition grace him, or not grace
I give the bauble but the second place ;
His wealth, fame, honours, all that I intend,
Subsist and center in one point—a friend.
A friend, whate'er he studies or neglects,
Shall give him consequence, heal all defects.
His intercourse with peers and sons of peers—
There dawns the splendour of his future years :
In that bright quarter his propitious skies
Shall blush betimes, and there his glory rise.
Your Lordship, and Your Grace ! what school can teach
A rhetoric equal to those parts of speech ?
What need of Homer's verse or Tully's prose.
Sweet interjections ! if he learn but those ?
Let reverend churls his ignorance rebuke,
Who starve upon a dog-ear'd Pentateuch.
The parson knows enough who knows a duke.”
Egregious purpose ! worthily begun
In barbarous prostitution of your son ;
Press'd on his part by means that would disgrace
A scrivener's clerk, or footman out of place,
And ending if at last its end be gain'd,
In sacrilege, in God's own house profan'd.
It may succeed ; and if his sins should call
For more than common punishment, it shall ;
The wretch shall rise, and be the thing on earth
Least qualified in honour, learning, worth,
To occupy a sacred, awful post,
In which the best and worthiest tremble most.
The royal letters are a thing of course,
A king, that would, might recommend his horse ;

And deans, no doubt, and chapters, with one voice,
 As bound in duty, would confirm the choice.
 Behold your Bishop! well he plays his part,
 Christian in name, and infidel in heart,
 Ghostly in office, earthly in his plan,
 A slave at court, elsewhere a lady's man.
 Dumb as a senator, and as a priest
 A piece of mere church furniture at best;
 To live estranged from God his total scope,
 And his end sure, without one glimpse of hope.
 But, fair although and feasible it seem,
 Depend not much upon your golden dream;
 For Providence, that seems concern'd to exempt
 The hallow'd bench from absolute contempt,
 In spite of all the wrigglers into place,
 Still keeps a seat or two for worth and grace;
 And therefore 'tis, that, though the sight be rare,
 We sometimes see a Lowth or Bagot there.
 Besides, school friendships are not always found,
 Though fair in promise, permanent and sound;
 The most disinterested and virtuous minds,
 In early years connected, time unbinds;
 New situations give a different cast
 Of habit, inclination, temper, taste;
 And he, that seem'd our counterpart at first,
 Soon shows the strong similitude reversed.
 Young heads are giddy, and young hearts are warm,
 And make mistakes for manhood to reform.
 Boys are, at best, but pretty buds unblown,
 Whose scent and hues are rather guess'd than known;
 Each dreams that each is just what he appears,
 But learns his error in maturer years,
 When disposition, like a sail unfurl'd,
 Shows all its rents and patches to the world.
 If, therefore e'en when honest in design,
 A boyish friendship may so soon decline,
 'Twere wiser sure to inspire a little heart
 With just abhorrence of so mean a part,
 Than set your son to work at a vile trade
 For wages so unlikely to be paid.

Our public hives of puerile resort,
 That are of chief and most approved report,
 To such base hopes, in many a sordid soul,
 Owe their repute in part but not the whole.
 A principle, whose proud pretensions pass
 Unquestion'd though the jewel be but glass—
 That with a world, often not over-nice,
 Ranks as a virtue, and is yet a vice;
 Or rather a gross compound, justly tried,
 Of envy, hatred, jealousy, and pride—
 Contributes most perhaps to enhance their fame
 And emulation is its specious name.
 Boys, once on fire with that contentious zeal
 Feel all the rage that female rivals feel;
 The prize of beauty in a woman's eyes
 Not brighter than in theirs the scholar's prize.

The spirit of that competition burns
 With all varieties of ill by turns ;
 Each vainly magnifies his own success,
 Resents his fellow's, wishes it were less,
 Exults in his miscarriage if he fail,
 Deems his reward too great if he prevail,
 And labours to surpass him day and night,
 Less for improvement than to tickle spits.
 The spur is powerful, and I grant its force ;
 It pricks the genius forward in its course,
 Allows short time for play, and none for sloth ;
 And felt alike by each, advances both :
 But judge, where so much evil intervenes,
 The end, though plausible, not worth the means.
 Weigh, for a moment, classical desert
 Against a heart depraved and temper hurt ;
 Hurt too perhaps for life ; for early wrong
 Done to the nobler part affects it long ;
 And you are stanch indeed in learning's cause
 If you can crown a discipline, that draws
 Such mischiefs after it with much applause.

Connexion form'd for interest, and endear'd
 By selfish views, thus censured and cashier'd ;
 And emulation, as engendering hate,
 Doom'd to a no less ignominious fate :
 The props of such proud seminaries fall,
 The Jachin and the Boaz of them all.
 Great schools rejected then as those that swell
 Beyond a size that can be managed well,
 Shall royal institutions miss the bays,
 And small academies win all the praise ?
 Force not my drift beyond its just intent,
 I praise a school as Pope a government ;
 So take my judgment in his language dress'd,
 " Whate'er is best administer'd is best."
 Few boys are born with talents that excel,
 But all are capable of living well ;
 Then ask not whether limited or large ?
 But, watch they strictly, or neglect their charge ?
 If anxious only that their boys may learn,
 While morals languish, a despised concern,
 The great and small deserve one common blame,
 Different in size, but in effect the same.
 Much zeal in virtue's cause all teachers boast,
 Though motives of mere lucre away the most ;
 Therefore in towns and cities they abound,
 For there the game they seek is easiest found,
 Though there, in spite of all that care can do,
 Traps to catch youth are most abundant too.
 If shrewd, and of a well-constructed brain,
 Keen in pursuit, and vigorous to retain,
 Your son come forth a prodigy of skill ;
 As, wheresoever taught, so form'd he will ;
 The pedagogue, with self-complacent air,
 Claims more than half the praise as his due share.

But if, with all his genius, he betray,
 Not more intelligent than loose and gay,
 Such vicious habits as disgrace his name,
 Threaten his health, his fortune, and his fame;
 Though want of due restraint alone have bred
 The symptoms that you see with so much dread;
 Unenvied there, he may sustain alone
 The whole reproach, the fault was all his own.

Oh! 'tis a sight to be with joy perused,
 By all whom sentiment has not abused;
 New-fangled sentiment, the boasted grace
 Of those who never feel in the right place;
 A sight surpass'd by none that we can show,
 Though Vestris on one leg still shine below;
 A father blest with an ingenious son,
 Father, and friend, and tutor, all in one.
 How!—turn again to tales long since forgot,
 Æsop, and Phædrus, and the rest!—Why not?
 He will not blush, that has a father's heart,
 To take in childish plays a childish part;
 But bends his sturdy back to any toy
 That youth takes pleasure in, to please his boy:
 Then why resign into a stranger's hand
 A task as much within your own command,
 That God and nature, and your interest too,
 Seem with one voice to delegate to you?
 Why hire a lodging in a house unknown
 For one whose tenderest thoughts all hover round your own?
 This second weaning, needless as it is,
 How does it lacerate both your heart and his!
 The indented stick, that loses day by day
 Notch after notch, till all are smooth'd away,
 Bears witness, long ere his dismissal come,
 With what intense desire he wants his home.
 But though the joys he hopes beneath your roof
 Bid fair enough to answer in the proof,
 Harmless, and safe, and natural, as they are,
 A disappointment waits him even there:
 Arrived, he feels an unexpected change;
 He blushes, hangs his head, is shy and strange,
 No longer takes, as once, with fearless ease,
 His favourite stand between his father's knees,
 But seeks the corner of some distant seat,
 And eyes the door, and watches a retreat,
 And, least familiar, where he should be most,
 Feels all his happiest privileges lost.
 Alas, poor boy!—the natural effect
 Of love by absence chill'd into respect.
 Say, what accomplishments, at school acquired,
 Brings he, to sweeten fruits so undesired?
 Thou well deserv'st an alienated son,
 Unless thy conscious heart acknowledge—none;
 None that, in thy domestic snug recess,
 He had not made his own with more address,

Though some, perhaps, that shock thy feeling mind,
And better never learn'd, or left behind.
Add too, that thus estranged, thou canst obtain
By no kind arts his confidence again ;
That here begins with most that long complaint
Of filial frankness lost, and love grown faint,
Which, oft neglected, in life's waning years
A parent pours into regardless ears.

Like caterpillars, dangling under trees
By slender threads, and swinging in the breeze,
Which filthily bewray and sore disgrace
The boughs in which are bred the unseemly race ;
While every worm industriously weaves
And winds his web about the rivell'd leaves ;
So numerous are the follies that annoy
The mind and heart of every sprightly boy ;
Imaginations noxious and perverse,
Which admonition can alone disperse.
The encroaching nuisance asks a faithful hand,
Patient, affectionate, of high command,
To check the procreation of a breed
Sure to exhaust the plant on which they feed.
'Tis not enough that Greek or Roman page,
At stated hours, his freakish thoughts engage ;
E'en in his pastimes he requires a friend
To warn, and teach him safely to unbend ;
O'er all his pleasures gently to preside,
Watch his emotions, and control their tide ;
And levying thus, and with an easy sway,
A tax of profit from his very play,
To impress a value not to be erased,
On moments squander'd else, and running all to waste.
And seems it nothing in a father's eye
That unimproved those many moments fly ?
And is he well content his son should find
No nourishment to feed his growing mind,
But conjugated verbs and nouns declined ?
For such is all the mental food parvey'd
By public hackneys in the schooling trade ;
Who feeds a pupil's intellect with store
Of syntax, truly, but with little more ;
Dismiss their cares when they dismiss their flock,
Machine themselves, and govern'd by a clock.
Perhaps a father, blest with any brains,
Would deem it no abuse, or waste of pains,
To improve this diet, at no great expense,
With savoury truth and wholesome common sense ;
To lead his son, for prospects of delight,
To come not steep, though philosophic, height,
Thence to exhibit to his wondering eyes,
Yon circling worlds, their distance, and their size,
The moons of Jove, and Saturn's belted ball,
And the harmonious order of them all ;
To show him in an insect or a flower
Such microscopic proof of skill and power,

As, hid from ages past, God now displays
 To combat atheists with in modern days;
 To spread the earth before him, and commend,
 With designation of the finger's end,
 Its various parts to his attentive note,
 Thus bringing home to him the most remote;
 To teach his heart to glow with generous flame,
 Caught from the deeds of men of ancient fame;
 And, more than all, with commendation due,
 To set some living worthy in his view,
 Whose fair example may at once inspire
 A wish to copy what he must admire.
 Such knowledge, gain'd betimes, and which appears,
 Though solid, not too weighty for his years,
 Sweet in itself, and not forbidding sport,
 When health demands it, of athletic sort,
 Would make him—what some lovely boys have been,
 And more than one perhaps that I have seen—
 An evidence and reprehension both
 Of the mere schoolboy's lean and tardy growth.

Art thou a man professionally tied,
 With all thy faculties elsewhere applied,
 Too busy to intend a meaner care
 Than how to enrich thyself, and next thine heir;
 Or art thou (as, though rich, perhaps thou art)
 But poor in knowledge, having none to impart:
 Behold that figure, neat, though plainly clad;
 His sprightly mingled with a shade of sad;
 Not of a nimble tongue, though now and then
 Heard to articulate like other men;
 No jester, and yet lively in discourse,
 His phrase well chosen, clear, and full of force;
 And his address, if not quite French in ease,
 Not English stiff, but frank and formed to please;
 Low in the world, because he scorns its arts;
 A man of letters, manners, morals, parts;
 Unpatronized, and therefore little known;
 Wise for himself, and his few friends alone—
 In him thy well-appointed proxy see,
 Arm'd for a work too difficult for thee;
 Prepared by taste, by learning and true worth,
 To form thy son, to strike his genius forth;
 Beneath thy roof, beneath thine eye, to prove
 The force of discipline when back'd by love;
 To double all thy pleasure in thy child,
 His mind inform'd, his morals undefiled,
 Safe under such a wing, the boy shall show
 No spots contracted among grooms below,
 Nor taint his speech with meannesses, design'd
 By footman Tom for witty and refined.
 There, in his commerce with the liveried herd,
 Lurks the contagion chiefly to be fear'd;
 For since (so fashion dictates) all, who claim
 A higher than a mere plebeian fame,

Find it expedient, come what mischief may,
 To entertain a thief or two in pay,
 (And they that can afford the expense of more,
 Some half a dozen, and some half a score,)
 Great cause occurs to save him from a band,
 So sure to spoil him, and so near at hand ;
 A point secured, if once he be supplied
 With some such Mentor always at his side.
 Are such men rare ? perhaps they would abound
 Were occupation easier to be found,
 Were education, else so sure to fail,
 Conducted on a manageable scale,
 And schools, that have outlived all just esteem,
 Exchanged for the secure domestic scheme.—
 But, having found him, be thou duke or earl,
 Show thou hast sense enough to prize the pearl,
 And, as thou wouldst the advancement of thine heir
 In all good faculties beneath his care,
 Respect, as is but rational and just,
 A man deem'd worthy of so dear a trust.
 Despised by thee, what more can he expect
 From youthful folly than the same neglect ?
 A flat and fatal negative obtains
 That instant upon all his future pains ;
 His lessons tire, his mild rebukes offend,
 And all the instructions of thy son's best friend
 Are a stream choked, or trickling to no end.
 Doom him not then to solitary meals ;
 But recollect that he has sense, and feels,
 And that, possessor of a soul refined,
 An upright heart, and cultivated mind,
 His post not mean, his talents not unknown,
 He deems it hard to vegetate alone.
 And, if admitted at thy board he sit,
 Account him no just mark for idle wit ;
 Offend not him, whom modesty restrains
 From repartee, with jokes that he disdains ;
 Much less transfix his feelings with an oath ;
 Nor frown, unless he vanish with the cloth—
 And, trust me, his utility may reach
 To more than he is hired or bound to teach ;
 Much trash unutter'd, and some ills undone,
 Through reverence of the censor of thy son.

But, if thy table be indeed unclean,
 Foul with excess, and with discourse obscene,
 And thou a wretch, whom following her old plan,
 The world accounts an honourable man,
 Because forsooth thy courage has been tried,
 And stood the test, perhaps on the wrong side ;
 Though thou hadst never grace enough to prove
 That any thing but vice could win thy love ;—
 Or hast thou a polite, card-playing wife,
 Chain'd to the routs that she frequents for life ;
 Who, just when industry begins to snore,
 Flies, wing'd with joy, to some coach-crowded door ;

And thrice in every winter throngs thine own
 With half the chariots and sedans in town,
 Thyself meanwhile e'en shifting as thou mayst ;
 Not very sober though, nor very chaste ;
 Or is thine house, though less superb thy rank,
 If not a scene of pleasure, a mere blank,
 And thou at best, and in thy soberest mood,
 A trifier vain, and empty of all good ;—
 Though mercy for thyself thou canst have none,
 Hear Nature plead, show mercy to thy son.
 Saved from his home, where every day brings forth
 Some mischief fatal to his future worth,
 Find him a better in a distant spot,
 Within some pious pastor's humble cot,
 Where vile example (yours I chiefly mean,
 The most seducing, and the ofteneast seen)
 May never more be stamp'd upon his breast,
 Not yet perhaps incurably impress'd.
 Where early rest makes early rising sure,
 Disease or comes not, or finds easy cure,
 Prevented much by diet neat and plain ;
 Or, if it enter, soon starved out again :
 Where all the attention of his faithful host,
 Discreetly limited to two at most,
 May raise such fruits as shall reward his care,
 And not at last evaporate in air :
 Where, stillness aiding study, and his mind
 Serene, and to his duties much inclined,
 Not occupied in day dream, as at home,
 Of pleasures past, or follies yet to come,
 His virtuous toil may terminate at last
 In settled habit and decided taste.—
 But whom do I advise ? the fashion-led,
 The incorrigibly wrong, the deaf, the dead !
 Whom care and cool deliberation suit
 Not better much than spectacles a brute ;
 Who, if their sons some slight tuition share,
 Deem it of no great moment whose, or where ;
 Too proud to adopt the thoughts of one unknown,
 And much too gay to have any of their own.
 But courage, man ! methought the Muse replied,
 Mankind are various, and the world is wide :
 The ostrich, silliest of the feather'd kind,
 And form'd of God without a parent's mind,
 Commits her eggs, incautious, to the dust,
 Forgetful that the foot may crush the trust ;
 And, while on public nurseries they rely,
 Not knowing, and too oft not caring, why,
 Irrational in what they thus prefer,
 No few, that would seem wise, resemble her.
 But all are not alike. Thy warning voice
 May here and there prevent erroneous choice ;
 And some, perhaps, who, busy as they are,
 Yet make their progeny their dearest care,

(Whose hearts will ache, once told what ills may reach
 Their offspring, left upon so wild a beach,)
 Will need no stress of argument to enforce
 The expedience of a less adventurous course :
 The rest will elight thy counsel, or condemn ;
 But they have human feelings—turn to them.

To you, then, tenants of life's middle state,
 Securely placed between the small and great,
 Whose character, yet undebauch'd, retains
 Two-thirds of all the virtue that remains,
 Who, wise yourselves, desire your sons should learn
 Your wisdom and your ways—to you I turn.
 Look round you on a world perversely blind ;
 See what contempt is fallen on human kind ;
 See wealth abused, and dignities misplaced,
 Great titles, offices, and trusts disgraced,
 Long lines of ancestry, renown'd of old,
 Their noble qualities all quench'd and cold ;
 See Bedlam's cloeseted and handcuff'd charge
 Surpass'd in frenzy by the mad at large ;
 See great commanders making war a trade,
 Great lawyers, lawyers without study made ;
 Churchmen, in whose esteem their best employ
 Is odious, and their wages all their joy,
 Who, far enough from furnishing their selves
 With gospel lore, turn infidels themselves ;
 See womanhood despised, and manhood shamed
 With infamy too nauseous to be named,
 Fops at all corners, ladylike in mien,
 Civeted fellows, smelt ere they are seen,
 Else coarse and rude in manners, and their tongues
 On fire with curses, and with nonsense hung,
 Now flushed with drunkenness, now with whoredom pale,
 Their breath a sample of last night's regale
 See volunteers in all the vilest arts,
 Men well endow'd of honourable parts,
 Design'd by Nature wise, but self-made fools ;
 All these, and more like these, were bred at schools.
 And if it chance, as sometimes chance it will,
 That though school-bred the boy be virtuous still ;
 Such rare exceptions, shining in the dark,
 Prove, rather than impeach, the just remark :
 As here and there a twinkling star descried
 Serves but to show how black is all beside.
 Now look on him, whose very voice in tone
 Just echoes thine, whose features are thine own,
 And stroke his polished cheek of purest red,
 And lay thine hand upon his flaxen head,
 And say, My boy, the unwelcome hour is come,
 When thou, transplanted from thy genial home,
 Must find a colder soil and bleaker air,
 And trust for safety to a stranger's care ;
 What character, what turn thou wilt assume
 From constant converse with I know not whom ;

Who there will court thy friendship, with what views,
And, artless as thou art, whom thou wilt choose;
Though much depends on what thy choice shall be,
Is all chance-medley, and unknown to me.

Canst thou, the tear just trembling on thy lids,
And while the dreadful risk foreseen forbids;
Free too, and under no constraining force,
Unless the sway of custom warp thy course;
Lay such a stake upon the losing aide,
Merely to gratify so blind a guide?

Thou canst not! Nature, pulling at thine heart,
Condemns the unfatherly, the imprudent part.
Thou wouldst not, deaf to Nature's tenderest plea,
Turn him adrift upon a rolling sea,
Nor say, Go thither, conscious that there lay
A brood of asps, or quicksands in his way;
Then, only govern'd by the self-same rule
Of natural pity, send him not to school.

No—guard him better. Is he not thine own,
Thyself in miniature, thy flesh, thy bone?
And hopest thou not, ('tis every father's hope,)
That, since thy strength must with thy years elope,
And thou wilt need some comfort to assuage
Health's last farewell, a staff of thine old age,
That then, in recompense of all thy cares,
Thy child shall show respect to thy gray hairs,
Befriend thee, of all other friends bereft,
And give thy life its only cordial left?
Aware then how much danger intervenes,
To compass that good end, forecast the means.

His heart, now passive, yields to thy command;
Secure it thine, its key is in thine hand;
If thou desert thy charge, and throw it wide,
Nor heed what guests there enter and abide,
Complain not if attachments lewd and base
Supplant thee in it, and usurp thy place.
But if thou guard its sacred chambers sure
From vicious inmates and delights impure,
Either his gratitude shall hold him fast,
And keep him warm and filial to the last;
Or, if he prove unkind, (as who can say
But, being man, and therefore frail, he may?)
One comfort yet shall cheer thine aged heart,
Howe'er he slight thee, thou hast done thy part.

Oh, barbarous! wouldst thou with a Gothic hand
Pull down the schools—what!—all the schools i'th' land;
Or throw them up to livery nags and grooms,
Or turn them into shops and auction-rooms?
A captious question, sir, (and yours is one,)
Deserves an answer similar, or none.
Wouldst thou, possessor of a flock, employ
(Apprised that he is such) a careless boy,
And feed him well, and give him handsome pay,
Merely to sleep, and let them run astray?
Survey our schools and colleges, and see
A sight not much unlike my simile.

From education, as the leading cause,
 The public character its colour draws ;
 Thence the prevailing manners take their cast,
 Extravagant or sober, loose or chaste.
 And, though I would not advertise them yet,
 Nor write on each—*This Building to be Let*,
 Unless the world were all prepared to embrace
 A plan well worthy to supply their place ;
 Yet, backward as they are, and long have been,
 To cultivate and keep the MORALS clean,
 (Forgive the crime,) I wish them, I confess,
 Or better managed, or encouraged less.

DISCIPLINE.

From the TASK. BOOK II. *The Time-Piece.*

In colleges and halls, in ancient days,
 When learning, virtue, piety, and truth
 Were precious and inculcated with care,
 There dwelt a sage call'd Discipline. His head,
 Not yet by time completely silver'd o'er,
 Bespoke him past the bounds of fleshly youth,
 But strong for service still, and unimpair'd.
 His eye was meek and gentle, and a smile
 Play'd on his lips ; and in his speech was heard
 Paternal sweetness, dignity, and love.
 The occupation dearest to his heart
 Was to encourage goodness. He would stroke
 The head of modest and ingenuous worth,
 That blush'd at its own praise ; and press the youth
 Close to his side that pleased him. Learning grew
 Beneath his care a thriving vigorous plant ;
 The mind was well inform'd, the passions held
 Subordinate, and diligence was choice.
 If e'er it chanced, as sometimes chance it must,
 That one among so many overleap'd
 The limits of control, his gentle eye
 Grew stern, and darted a severe rebuke
 His frown was full of terror, and his voice
 Shook the delinquent with such fits of awe
 As left him not, till penitence had won
 Lost favor back again, and closed the breach.
 But Discipline, a faithful servant long,
 Declined at length into the vale of years :
 A palsy struck his arm ; his sparkling eye
 Was quench'd in rheum of age ; his voice, unstrung,
 Grew tremulous, and moved derision more
 Than reverence in perverse rebellious youth.
 So colleges and halls neglected much
 Their good old friend ; and Discipline at length,
 O'er look'd and unemploy'd, fell sick, and died.
 Then Study languish'd, Emulation slept,
 And Virtue fled. The schools became a scene
 Of solemn farce, where Ignorance in stilt,
 His cap well lined with logic not his own,
 With parrot tongue perform'd the scholar's part,
 Proceeding soon a graduated dunce.
 Then compromise had place, and scrutiny
 Became stone blind ; precedence went for truck,
 And he was competent whose purse was so.

A dissolution of all bonds ensued ;
 The curbs invented for the mulish mouth
 Of headstrong youth were broken ; bars and bolts
 Grew rusty by disuse ; and many gates
 Forgot their office, opening with a touch ;
 Till gowns at length are found mere masquerade,
 The tassel'd cap and the spruce band a jest,
 A mockery of the world ! What need of these
 For gamblers, jockeys, brothelers impure,
 Spendthrifts, and booted sportsmen oftener seen
 With belted waist and pointers at their heels
 Than in the bounds of duty ? What was learn'd
 If aught was learn'd in childhood, is forgot ;
 And such expense as pinches parents blue,
 And mortifies the liberal hand of love,
 Is squander'd in pursuit of idle sports
 And vicious pleasures ; buys the boy a name
 That sits a stigma on his father's house,
 And cleaves through life inseparably close
 To him that wears it. What can after-games
 Of riper joys, and commerce with the world,
 The lewd vain world, that must receive him soon,
 Add to such erudition, thus acquired,
 Where science and where virtue are profess'd ?
 They may confirm his habits, rivet fast
 His folly, but to spoil him is a task
 That bids defiance to the united powers
 Of fashion, dissipation, taverns, stews.
 Now blame we most the nurlings or the nurse
 The children, crook'd, and twisted, and deform'd,
 Through want of care ; or her, whose winking eye
 And slumbering oscitancy mars the brood ?
 The nurse, no doubt. Regardless of her charge,
 She needs herself correction ; needs to learn
 That it is dangerous sporting with the world,
 With things so sacred as a nation's trust,
 The nurture of her youth, her dearest pledge.

All are not such. I had a brother once—^{*}
 Peace to the memory of a man of worth,
 A man of letters, and of manners too !
 Of manners sweet as Virtue always wears,
 When gay good-nature dresses her in smiles.
 He graced a college,† in which order yet
 Was sacred ; and was honor'd, loved, and wept
 By more than one, themselves conspicuous there.
 Some minds are temper'd happily, and mix'd
 With such ingredients of good sense and taste
 Of what is excellent in man, they thirst
 With such a zeal to be what they approve,
 That no restraints can circumscribe them more
 Than they themselves by choice, for wisdom's sake.
 Nor can example hurt them ; what they see
 Of vice in others, but enhancing more
 The charms of virtue in their just esteem
 If such escape contagion, and emerge
 Pure from so foul a pool to shine abroad,
 And give the world their talents and themselves,
 Small thanks to those, whose negligence or sloth
 Exposed their inexperience to the snare,
 And left them to an undirected choice.

^{*} Rev. William Cowper.

[†] Bennet College, Cambridge.

VIII. PUBLIC INSTRUCTION IN BAVARIA.

[Translated for the Journal, from Schmid's Encyclopedia of Education.]

(Continued from page 292, Vol. VI.)

II. SECONDARY SCHOOLS.

I. *High Schools for Girls*.—These, in Bavaria, correspond to the Real schools for boys. Heretofore the nobility have endeavored, as far as possible, to supply the need of a higher education of girls by means of governesses; and the higher classes generally, by means of institutions of higher grade. Stephani was especially active in introducing these schools into Bavaria; where, in Augsburg, Nuremberg, and Ansbach, he established, or at least organized anew, higher schools for girls. The Seidel Private School has been in existence in Nuremberg ever since the year 1804. One of the most remarkable institutions of this class is the Stetten Girls' Educational Institution, at Augsburg; whose especial design is, according to the will of its foundress, Anna Barbara von Stetten, to replace to children early made orphans the loss of parental love and protection. In this connection should not be omitted the girls' school connected with the Deaconesses' House at New Dettelsau, under the management of Pastor Löhe; partly by reason of its ecclesiastical character (the course includes introduction to the creed, manual of French, French Bible and hymns, German literature after Vilmar,) and partly because it has a special purpose of training teachers for families, schools, rescue institutions, and institutions for care of infants. In 1818, King Maximilian founded, in Munich, an institution called King Maximilian's Foundation, to receive sixty pupils. Thirty of its scholarships are free; and are to be given to daughters of officers, persons of noble family, and the higher state *employés* of Bavaria, from the collegial council upward. The Institution of the "English Ladies" for the Instruction of Females was opened at Bamberg in 1829, under the auspices of the government of Upper Franconia, and a branch institution was established at Nuremberg in 1854, which already contains one hundred and ten pupils, and, together with two other institutions for girls, contains about five hundred pupils and thirty teachers. The institutions of the "English Ladies" are regarded with much favor by the higher classes; and in the schools at Burghausen and Nymphenburg, for example, there are places endowed from the public funds. Some of the circle governments also afford aid to the higher schools for girls. We have information, in all, of forty-seven conventual institutions of the English Ladies, Poor Sisters of

Schools, Nuns of St. Francis de Sales, Dominican, Franciscan, and Ursuline Nuns, and Ladies of the Good Shepherd,—with 274 instructors and 1724 pupils; also fifty-six institutions not conventual, at Munich and Mühldorf in Upper Bavaria, Frankenthal, Kaiserslautern, Speier, and Zweibrücken, in the Palatinate; Erlangen, Ansbach, Fürth, and Nuremberg, in Middle Franconia; Ratibon and Pielenhosen, in the Upper Palatinate; Würzburg, Kitzingen, and Schweinfurt, in Lower Franconia; and at Augsburg, Lautrach, Kempten, and Nördlingen, in Suabia; with 846 instructors and 2472 pupils; so that a total number of 4196 girls are instructed in the higher institutions. All these are subject to public supervision and management as the public institutions are, under the city or district inspecting authorities, and testify to their progress by public examinations. They are also subject to a visitation from the circle governments, by a commissary of examinations. Wherever a spirit of sound piety and of honorable German morals prevails in these institutions, which train so large a number of the future mothers of the educated classes, they are exceedingly useful members of the series of educational institutions; but where they call into activity the avarice and vanity of parents who desire to rise above their station; where they destroy in their pupils the appropriate domestic feelings, and all pleasure in those employments which will be of most importance in their future lives; and, on the other hand, where they cultivate such studies as are only a bribe to ignorance, and usurp the place of other and perhaps more useful schools, there they are a poison to the life of the nation.

Upon the prospectuses and annual reports of the most important educational institutions for females of Bavaria, which now lie before us, we make the following remarks:—The greatest number of hours of instruction per week is forty-one; but the number in such institutions as are organized with more regard to the healthy development of the body is from twenty-eight to thirty-four. These are divided among religion, German literature, arithmetic, geography, history, (including mythology,) natural science, calligraphy, French, English, Italian, singing, drawing, manual labor, dancing. The largest proportion of time is every where given to the French language; as we hope, only for the reason that, to learn a foreign tongue, much time is necessary. We read with pleasure in one of the annual reports the opinion that "The native language, more than any other, is that in which children should be so well instructed as to be able to express themselves clearly and with certainty, both orally and in writing, upon all subjects which will fall within their sphere of activity; and foreign languages should not be used merely as a means of affected talk and an idle show of foreign habits, but in order that their idioms may assist to interest the child in learning the structure of its own language." It is not merely speaking, but a language, which is to be learned. On this principle it is that foreign languages should be taught in the higher institutions for girls. But when, besides conversation, foreign languages absorb from twelve to fifteen hours' study per week, and the ordinary language of the institution is also French, such a pre-

dominance of the foreign element in the most important period of education must cause the German element to become subordinated. Such educational institutions do not deserve to remain on German soil. "Literature" is also a general study in the higher institutions for girls; some of which describe it by the French *littérature*. Others judiciously avoid the names literature and literary history, and mention the subjects included under them by their German names. They make their pupils familiar with certain works of the best authors; as Shakspeare's "*Merchant of Venice*," and "*King John*;" Goethe's "*Goetz von Berlichingen*;" Schiller's "*William Tell*;" Herder's "*Od*;" Tegner's "*Frithiof's Saga*;" various works of Platen, Wilhelm von Humboldt, Novalis, Schleiermacher, and others. Others use as text-books some book of extracts, especially Lüben's or Nacke's. The principle of teaching no literary history is undoubtedly the right one; but it is necessary, during the higher education of girls, to purify their taste by making them acquainted with the best literature, lest they be in danger of following the guidance of the circulating libraries in that field. History, in these institutions, is studied in a general manner, and more comprehensively than in the common schools; and includes the history of the civilized nations of ancient and modern times. By the latest "Instruction" on teaching history, Bavarian history is to receive special attention in the girls' schools also. Geography appears in the courses of study as extensively as history; as do also natural history and natural science, under various names, sometimes too ambitious. Here and there we fail to find singing, which should be obligatory every where, made a public study. Drawing is chiefly of flowers and landscapes, with the design of assisting in some varieties of handiwork. The exercises in manual employments occupy every where a large number of hours—from six to nine—and are every where made a means of conversation in foreign languages, reading, and sometimes in history, but this last only in an anecdotal style. They include knitting, sewing, embroidery, various fashionable kinds of work, &c. Here and there special stress is laid on such feminine employments as are absolutely essential; and, in some, those less important are studied, in the period before Christmas.

In regard to the teachers:—Except in the institutions of the religious orders, religion, German, history, natural history, and German literature, are intrusted to male teachers, and arithmetic, writing, drawing, and foreign languages, sometimes by males and sometimes by females; though the latter are more commonly employed in the last named study. In the convent schools, a very large majority of the teachers are females; twenty-seven of these institutions contained one hundred and ninety-four female teachers and only eleven males. Thus these schools serve to train female teachers. Those female teachers not trained in the convents have commonly been educated in the Swiss boarding-schools, or have wandered into Bavaria from the canton of Neuenburg. The age for entering these schools varies from six to ten, and is sometimes as late as thirteen years; although the Poor Sisters of Schools receive pupils as young as three years. Most of the pupils remain to the age of sixteen; and a few

only to seventeen and eighteen. The upper classes decrease in number by a third, and even a half. The payments at boarding-schools are from eighty to four hundred florins, not including extras; and the tuition-fee, for day-scholars, from one to ten florins a month. Too small a charge ought to be prohibited, for otherwise the common schools might easily be deprived of the best of their inmates.

II. *Gymnasias and Classical Schools*.—Classical education in Bavaria, as elsewhere, was, during the first half of the Middle Ages, exclusively afforded by clerical institutions; in part by the cathedral schools, of which Freising was the earliest, and Augsburg another and one of the most eminent; in part by the numerous cloister schools of the Benedictines, some of the earliest of which were Ohiemsee, Benedictbeuern, Weasbrunn, and among which were afterward eminent St. Emmeran at Augsburg, Niederalteich, Tegernsee, Weihestephán, and Scheyern. Public schools of this class first existed under the dukes of the House of Wittelsbach. The first of these was the city school of Munich, founded A. D. 1289. Duke Ludwig the Rich founded the University of Ingolstadt, 1472. The first Jesuits were invited thither in 1549; in 1559 the schools of Munich were committed to them, and all public Catholic institutions of education gradually passed into their hands. The cloister schools of the Benedictines endeavored to rival them; and, in 1684, twenty-nine of them united in a "congregation," whose purpose was learning and instruction. These monks established gymnasias only in Salzburg (made a university in 1628,) and at Freising in 1708. At the convent of Ettal was established, in 1711, a knights' academy, or *collegium nobilium*. Evangelical classical schools were established in the imperial cities, as Nuremberg, Augsburg, Ratisbon, Schweinfurt; and in the Margraviates of Ansbach and Bayreuth in Brandenburg, at Ansbach, Heilbronn, Hof, and Neustadt on the Aisch. At the dissolution of the Order of the Jesuits in 1773, Elector Maximilian III. proposed to devote most of their property to a fund for the schools; but Elector Karl Theodore used it to establish a branch of the Order of the Knights of Malta. The gymnasias were supplied with teachers from the convents until the dissolution of the latter in 1803, and afterward from the secular clergy and laymen.*

The first plan of school organization for the provinces included in the present Kingdom of Bavaria, was that in the "General Normative" of Niethammer, of 1808; drawn up strictly upon the humanist principles, in opposition to the realist character of that of Wismayr, of 1804. The former of these classed all institutions for study as I. Universities—and, parallel with them, the Lycea; II. Gymnasias—and parallel with them the Real Institutes; III. Progymnasias—and with them the Real Schools; IV. Primary Schools, as preparatory to both these divisions. These latter include, in two classes, from the eighth to the fourteenth year; the progymnasium, from the twelfth to the fourteenth; the gymnasium from the

* The history of many of the gymnasias has lately been published in their programmes, and general accounts of all those in Bavaria are given especially by the programmes of Wagner (Ratisbon, 1830,) and of Krüger (Straubing, 1852.)

fourteenth to the eighteenth. In the primary schools was required complete acquaintance with the technical grammar of Latin and German; in the progymnasium especial stress was laid on Greek grammar; and in the gymnasium the chief studies were those in the classical languages, and an introduction to the speculative study of ideas (described in 1810 as "practical elementary exercises in speculative thinking.") In the three upper classes of institutions, the hours of literary study are twenty-six per week; of which, in the gymnasia, the class-teachers occupy sixteen. Besides these, there are two special gymnasium teachers, one for mathematics, cosmography, and physiography, and the other for the philosophical sciences; each of whom has four hours per week with each class. The latter of these two teachers instructs, in the lowest class, in religion, morals, and duties, which lead to logical exercises and an introduction to philosophy; and afterward, in the higher classes, to the introduction to a knowledge of the general connection of the sciences; or else, if these requirements appear too high, to logic, cosmology, natural theology, psychology, ethical and juridical views; and lastly to a philosophical encyclopedia. Religious instruction was intrusted to the teachers of preparatory philosophical studies until 1810, when it was for the first time extended to all four of the gymnasium classes. In the course of instruction in language are studied not only the Greek and Latin authors, but a fixed series of German authors. The Greek course is injured by the plan used of studying, in the lower middle class, the Homeric hymns, Bion, Moschus, and the *Batrachomyomachia*, before the *Iliad* and *Odyssey*, which are only reached in the upper middle class. In history, there is a first general course in the primary school and progymnasium, interchanging afterward with geography; in the gymnasium the first class compares ancient and modern geography, and the second studies mythology and archaeology. The third and fourth have a second special course of history.

The preparatory philosophical studies were discontinued in 1816, and the teachers not only for the department of philosophy, but for that of mathematics, were removed, and religion and mathematics were transferred to the regular class teachers, to be taught, with some exchange of assistance, with the professors. The school ordinance of 1824, which consolidated into one gymnasium with five classes the two progymnasium classes and the four of the gymnasium, and which established an obligatory lyceum class between the gymnasium and the university, put the mathematical instruction of the three upper gymnasium classes into the hands of the lyceum professor, and confined all religious instruction to clerical teachers. The school ordinance of 1830, based upon that prepared by Thiersch, in 1829, which was withdrawn and modified by the ministry for the purpose, restored a professor of mathematics to the gymnasia, and put under his charge the lyceum class, which was changed into an upper class of the gymnasium.*

* Respecting the modifications promulgated in the school ordinances and general rescripts of 1804, 1830, 1834, 1836, and 1838, down to the latest revised ordinance for the Latin schools and gym-

The most important school laws on the subject since the beginning of the century are given in Döllinger's "*Collection of Ordinances*," Vol. IX., part 2. The humanist view has been adhered to in the school-plans adopted, and the design of the gymnasia, as stated in 1824, "Improvement in grammatical studies and the whole body of literary (*humanistische*) studies," and that of 1829, "To promote the intellectual strength and thorough preparation of youth devoting themselves to learned studies with a view to the universities," is entirely in accordance with what here follows.

Regulations as to private teaching.—"Any person proposing to give private instruction to supply the place of the school or gymnasium, unless he be a clergyman, must pass the examination for teacher of a gymnasium. Permission to establish institutions for private instruction and education, intended as substitutes for the Latin school and the gymnasium, must be obtained from the circle governments. The supervision of such institutions is intrusted to the rector of the nearest gymnasium. (Revised ordinance of 1854.) There are no private institutions of a grade corresponding to the gymnasia; but there are, corresponding to the Latin schools, private schools in Münchberg and Thurnau, and the Eussner Institution at Würzburg. The classical schools (*Gelchrtenschulen*.) are divided into Latin schools and gymnasia. The lyceæ, of which there are ten, are omitted in the following accounts, since they do not, as did those of 1824-29, form a grade between the gymnasium and the university, but are, in respect to subjects of instruction, quite coincident with the universities. Three of them have a philosophical faculty, seven are complete, with philosophical and theological faculties. In 1857 they contained 615 candidates; they are mostly attended only by Catholic theological students. The primary schools were in 1816 separated from the gymnasia, under the name of "Latin preparatory schools," and were declared local institutions, so far as supplies and teacher's salaries are concerned; which measure, however, was carried through, by the reassertion of this principle in 1824, as well as in 1816 against the protestations of the parishes. The principals of Latin schools in cities where there was a gymnasium were denominated "sub-rectors" in 1830, and placed under the supervision of the rectors of such gymnasia; and, in 1833, both principalships were united in the latter.

With respect to the funds appropriated to the Latin schools, a distinction was sought to be made in 1850 between such of them as were called for by an absolute need of their instruction and such as owed their existence to local or parish interests; but the reports from the circle governments were so various in respect to this subject that the ministry were obliged to give up the undertaking.

The gymnasia, of which there are twenty-eight in all, may be classed, according to the distinction of confessions which was made in 1841, as a,

nasia in the kingdom of Bavaria (Munich, 1854, at the Royal School Book-Printing Establishment,) much information may be found in C. L. Roth's work, "*The Gymnasiums in Bavaria between 1824 and 1843*."

Catholic, at Munich (where there are three,) Freising, Landshut, Passau, Straubing, Metten, Augsburg, Dillingen, Kempten, Neuburg, Amberg, Bamberg, Eichstätt, Aschaffenburg, Münnersstadt, Würzburg, and Speyer; & *Protestant*, at Augsburg, Ansbach, Erlangen, Nuremberg, Bayreuth, Hof, Schweinfurt, and Zweibrücken; and *c. Mixed*, at Ratisbon. Each of these has nine regular teachers: of whom four are class teachers, one the gymnasium mathematical teacher, and four class teachers in the Latin school. In some gymnasias, which are excessively crowded—at present, in Bayreuth, St. Stephan's at Augsburg, Metten, Ratisbon, and Würzburg—there are parallel classes, with special teachers.* Besides these twenty-eight gymnasias, which are connected with Latin schools, to which should be added, as a special school, the educational institution connected with the Ludwig's Gymnasium in Munich, there are in other places sixty-seven separate Latin schools, also divided according to confessions in the same manner. The Latin schools are in part complete, with four classes, twenty-eight of these being connected with gymnasias, and thirty-four separate; and in part incomplete, with from one to three principal teachers—of which there are also thirty-four. The number of scholars in the ninety-six Latin schools is given in "*Contributions to the Statistics of Bavaria*," by Hermann, 1852, at 7,405; of whom 4,795 are Catholic, 2,429 Protestants, 177 Jews, 4 of other beliefs: and that of the gymnasias proper, at 3,529;† of whom 2,689 are Catholics, 798 Protestants, and 42 Jews: in a population of 4,526,650; of which more than 3,000,000 are Catholics, more than 1,350,000 are Protestants, about 56,000 Jews, and 6,000 Menonites, Anabaptists, and Greeks. The graduating examinations of the gymnasias were passed, in 1852, by 789 pupils; in 1882 by only 480. The total number of students at the three universities is given by Hermann as, in 1832, 2,234, in 1882, 2,689; which numbers, in comparison with those above given of the gymnasium graduates for those two years, indicate a distinct decrease in the number of those pursuing a course of study. The secondary schools furnish most of the instruction in the Palatinate; and the Upper Palatinate furnishes the least proportion of students. The children of the higher ranks are throughout sent to the classical schools, and the larger part of those of the higher class of citizens. In the Catholic portions of the country, a large part of the scholars come from the lower agricultural class. About one-fifth of the gymnasium graduates enter such departments of the public employment as require no academical studies; and from the Latin schools full one-third

* The revised ordinance, instead of the previous rule of forty pupils per teacher, provides that "if one class shall grow to more than fifty scholars, the teacher shall be allowed an assistant, or the class be divided."

† According to the "*New Munich Gazette*," this total was in 1837 only 2,419; and the number of pupils in the twenty-eight gymnasias, including the Latin schools connected with them, in 1849, 8,259; in 1853, 8,239; in 1857, 6,511. "An increase in numbers has taken place in a few institutions only, most of them having decreased, some by as much as one hundred or more; as, for example, Amberg, Bamberg, Landshut, Passau, Speyer, and still more particularly Würzburg, Straubing, Dillingen, and Ratisbon, which last has 279 scholars less than four years ago." The circles showing the greatest decrease are Lower Bavaria, Swabia, the Upper Palatinate, and Upper Franconia.

go into business. Generally speaking, there has been noticed of late years in the Catholic institutions, owing to the greater strictness observed in respect to removals, a remarkable decrease in the number of pupils.

The income of the gymnasia and Latin schools is, according to Hermann's tables, in round numbers,

From endowments,	67,094	florins.
From tuition-fees,	38,659	"
From parishes,	29,918	"
From foundations,	44,504	"
From the state,	279,191	"

Total, adding three florins for the kreuzers, ... 459,369 "

In this total are included the payments from the mediatised principality of Pappenheim for the Latin school there; but not the increased allowance to the gymnasium at Metten from the Benedictine foundation there, nor the entire allowance of the Latin school at Scheyern, supplied from the Benedictine abbey there. In Bluntschli's "*State Dictionary*," the expenditure for the Latin schools is given at 154,768 florins, and that for the gymnasia at 195,699 florins; and the contribution of the state to the former item at 52,209 florins, to the latter at 120,479 florins. An attempt was made in 1816 to fix a suitable tuition-fee for the Latin schools, to be not more than four florins yearly; and in 1824 to fix that of the gymnasia at twenty florins a year. But this uniformity could never be carried out, and at present the tuition-fee varies from a minimum of one florin to twelve kreuzers to a maximum of eighteen florins annually. In March, 1824, a decree was issued that in order to freedom from payment of the tuition-fee, not only indigence was necessary, but a place in the upper third of the class, as an evidence of desert; which was changed to the upper two-thirds in October, 1824. These enactments have not been continued; and consequently the decision of merit is left to the council of teachers of each institution. Allowances of money for books exist for single individuals; public free-tables are however found only in the form of seminaries and *Alumneen*.

With these public schools are to be considered the following as being educational institutions: I. Catholic—the royal educational institutions in Landshut, Neuburg, and Amberg; the boys' seminaries for those intended for the ministry, at Freising, Passau, Aschaffenburg, and Eichstädt; the Benedictine institutions at Munich, Augsburg, Scheyern, and Metten; the *Convictorium* in the Carmelite convent at Straubing; and the Von Aufseess Seminary at Bamberg: and II. Protestant—the College of St. Anna at Augsburg; the Alumneum at Ansbach; and, for ecclesiastical purposes, the Alumneæ at Ratisbon and Hof, and the House for Ministers' Orphans at Windsbach.

There are many introductory schools, which prepare pupils for the Latin studies of the Latin school, and whose German instruction is similar to that of the common schools; but none except of a private character. Latin schools with real classes are especially common in the Palatinate,

where indeed there are only two without them, while in all Bavaria east of the Rhine there are only three with such classes. The real schools, instead of the ancient languages, teach natural history, geometry, and the elements of physics; and in other respects their course is similar to that of the Latin schools. There existed an intermediate class between the gymnasia and universities only from 1824 to 1839; namely, the lyceum class. The number of scholars in the twenty-six agricultural and industrial schools was, according to Hermann, in 1852, 2,549; being not quite a quarter of the number at the classical schools. The number of male (work-day) pupils in the German schools was 284,788; giving one scholar at a classical school for each twenty-six of the boys at the common schools.

The immediate management of the isolated Latin schools is in charge of the sub-rectors; that of those in connection with gymnasia, in the rectors of the latter. The rector and sub-rector are among the regular instructors of the two upper classes. The arrangement made in 1808, by which two of the professors were appointed once in two years as "assessors" to the rector, was discontinued in 1839; and the "local school-archate," then introduced as a sort of compromise with the public, was also discontinued in the revised ordinance of 1854, after having remained still longer, mostly without efficiency. The circle commissaries, appointed in 1833, out of apprehensions relative to political errors, and armed "with the most extensive powers in relation to whatever concerns school discipline," being a city commissary, president of a subordinate court, or territorial judge of the locality, were also discontinued in 1854. The rector has therefore no consulting authority except the council of teachers, with whom he considers upon the course of instruction, and which decides on the promotion of the scholars and on the management of difficult cases of discipline. The highest punishment, that of exclusion from all educational institutions, is inflicted by the circle government on the requisition of this council. The separate Latin schools are made subordinate to the principal of the nearest gymnasium. The supervision of all the institutions in a circle is in the hands of the circle government. The special school councils appointed in connection with these authorities were discontinued in 1825, and in 1832 the "circle school-archate" was introduced: an office to which were appointed rectors, professors, and school inspectors, and whose duties are to advise with the circle government and to visit the classical schools. This has been carried into actual practice however only in the separate Latin schools; and latterly the office seems to be continued only for the common schools; so that the "councils" appointed for the classical schools in connection with the circle government are no better than if they did not exist. A separate ministry for churches and schools was first established in 1847, in place of the high councils for churches and schools organized in 1825, as a section of the ministry of the interior. The portfolio of this office was however transferred about among various ministers, until in 1848 a separate minister was appointed to that department. The partition of business among the councilors of

this ministry is not fixed by any rule. The provision of the second appendix to the second addition to the constitution, that Protestant school affairs are to be in the hands of a Protestant high council of studies, and Catholic of a Catholic one, has been construed to refer, not to the gymnasia, but to the common schools only; and thus all the gymnasia are under the charge of a Catholic ministerial council, as they were previously under a Protestant high council of studies. The same is true of this department in the circle governments.

The regular age for entering the lowest class is at the end of the tenth year; the time of remaining in each class one year, and the age for entering the university eighteen. From those entering the above lowest class is required a knowledge of the corresponding course in the German schools, of the simpler processes of arithmetic, and the Latin declensions. Promotion to a higher class takes place yearly in the autumn, by decision of the council of teachers; and any one unable to enter the next higher class after a two years' experiment, or obliged to repeat one years' course and about being obliged to repeat another, is dismissed. The ordinance made in 1884, but not carried out every where, that the class-teachers shall exchange with each other, so that each shall carry his scholars through two classes, is withdrawn by the revised ordinance of 1884.

The school hours, restricted in 1884, in all classes, to twenty-two per week, for fear of overtasking the pupils, is in the revised ordinance left at the same number in the Latin schools, but raised to twenty-four for the gymnasia.

These hours are arranged as follows:—

	LATIN SCHOOL.				GYMNASIUM.			
	Classes.				Classes.			
	I.	II.	III.	IV.	I.	II.	III.	IV.
Religion,.....	2	2	2	2	2	2	2	2
Latin,.....	10	10	8	8	7	7	6	6
Greek,.....	—	—	5	5	6	6	5	5
German,.....	3	3	2	2	2	2	2	2
French,.....	—	—	—	—	2	2	2	2
Arithmetic,.....	3	3	2	2	3	3	3	3
Mathematics, (in the gym.),	3	3	2	2	3	3	3	3
Geography,.....	2	2	1	1	—	—	—	—
History,.....	—	—	2	2	2	2	2	2
Physica,.....	—	—	—	—	—	2	2	2
Writing,.....	2	2	—	—	—	—	—	—
Total,.....	22	22	22	22	24	24	24	24

These studies are obligatory; Hebrew, singing, drawing, gymnastics, and swimming are optional; and in some institutions English, Italian, stenography, and instrumental music are taught. But these optionals, if begun, are not allowed to be dropped during the term.

The religious instruction is made the general basis with reference to which the ministry selects the various requisites for instruction in relig-

ion, the languages, poetry and rhetoric, German literary history, mathematics and physics, history and geography; the necessary text-books and reading-books, books for translation, &c.; several works being to be used for each selection. The council of teachers of each institution is obliged to notify the selection of books made, and those chosen must be used for five years.

Religious instruction is to be given by clergymen or by clerical teachers; and the ecclesiastical authorities have supervision of them. The state takes charge of the religious instruction of Protestant and Catholic children in all institutions; but not of that of the Jews. Each school-day begins with devotional exercises: consisting, for the Catholic scholars, in attending mass, for the Protestants, in a morning prayer (without reading in the Bible,) and in some institutions with singing. An additional daily prayer was ordered in 1889 for the king and the government. The usual text-books in religion are, for Protestants, Zahn's "*Biblical History*;" Rauschenbusch; Kurtz's "*Sacred History*;" Thomasius' "*Outlines*;" for the Catholics, Christian Schmid's "*Biblical History*;" "*Catechism for the Bavarian Bishops*;" "*Manual of Religion*" for the Catholic gymnasia of Bavaria. Matter to be memorized by Protestants: forty hymns selected by the high consistory, catechism, and texts. Pupils who are attending instruction preparatory to confirmation, are not obliged to attend the religious instruction in the schools. The catechising lessons in the church are not attended by the scholars. Most of the scholars attend communion together, but not with their teachers. Pupils of both confessions are obliged, on all Sundays and feast-days, to attend worship in their respective churches; and, according to the revised ordinance, under the charge of their teachers of the same confession.

In respect to the responsibility of the teachers as to divine service, the principle prevails which was established in the general law of 1810, under which it is expected that the teachers shall set their pupils a good example in attendance at church, but they are only required to take their turns in supervising them while there. This however is not all that is required by an ordinance of 1850, which strictly requires that every teacher shall attend divine service every Sunday. The additional provisions of 1841 and 1842, by which every scholar, who does not come up to a certain standard in piety as well as in religious knowledge, is prohibited from rising to a higher class, are repealed in the revised ordinance.

In Latin, the first (lowest) class studies the forms of the language, learning "families of words, but not such as are disconnected;" the second and third, syntax; the fourth reviews these, and studies prosody and (dactylic) meter. The metrical exercises are confined to the reconstruction of distichs which are taken to pieces. In the gymnasium, the course includes no metrical exercises, although each teacher may either continue them or omit them altogether. Recitations expressly for grammar are not required in the gymnasium. The third class of the Latin school reads C. Nepos and Phædrus; and the fourth, Cæsar's War in Gaul, or some historical chrestomathy. For the four classes of the gym-

nasium several books are directed, among which choice may be made, with the provision that the historians shall precede the orators and philosophers, and the epic poets the lyric and dramatic: for Class I., Cæsar *De Bello Gallico*, Curtius, Cicero *De Senectute* and *De Amicitia*, parts of Ovid's *Metamorphoses* and *Elegies*—and, cursorily, Cæsar's *De Bello Gallico* and Justin; for Class II., Livy, Sallust, Ovid's *Fasti*, Virgil's *Æneid*, parts of the *Elegies*—and, cursorily, Curtius; for Class III., Cicero's *Orations* and select *epistles*, Quintilian, Virgil's *Bucolics*, select poems of Horace and *Ad Pisone*m—and, cursorily, Livy, Sallust, and the *Æneid*; for Class IV., Cicero's *Orations* and rhetorical and philosophical works, Seneca's *epistles* and smaller philosophical works, Tacitus, the *Satires* and *Epistles* of Horace, and Virgil's *Georgics*—and, cursorily, Livy and Cicero. Besides the course of reading for study, there is thus a cursory course. Not more than two Latin and two Greek authors are to be read at the same time, in the former course, in any one class. In 1839, the editions of the classics from the Central School-Book Printing Establishment at Munich were prescribed without any exception as the only ones permitted. This monopoly was first discontinued in 1849, and other editions also allowed, as far as the proper authorities should recognize them as suitable, and particularly as correct and not injurious to the sight of the pupils. For the higher classes, two hours a week are commonly used in exercises in style, and four only for reading. No rule is made for the gymnasia as to the apportionment of time between expository exercises and those in composition. A rescript of 1856 prescribes, for the Latin schools, six house-lessons per month, which the teacher is to correct at home, on the language generally. Optional Latin compositions are not mentioned in the school ordinances; so that each separate institution is left to its own course in this particular. The same is the case as to speaking Latin. Text-books are the grammars of Zumpt, Englmann, Putsche, Mutzl, Siberti and Meiring, Feldbausch, Middendorf-Gruter; reading-books of Jacobs and Döring, Englmann, Holzer, Gröbel, Schönborn, Süpfle, Hoffmann, Feldbausch, Ellerdt, Schulz, Hefner, Seyffert, Nägelsbach; in meter, Emmerig, Döderlein's *Vocabularium*, and Herold's *Vademecum*.

The beginning of instruction in Greek was changed, in 1838, (in the period of the Abel ministry,) from the third to the fourth class of the Latin school. The revised ordinance of 1854 re-established the earlier period; as had in fact been the case before. The study of the forms of the language was completed in the third and fourth classes; that of the syntax and the dialects was left to the gymnasia. The instruction in grammar is combined with written translations into Greek. The classics prescribed for selection are, for Class I., Xenophon's *Anabasis*, and the *Odyssey*; for Class II., Xenophon's *Cyropædia* and *Hellénika*, Plutarch's *Lives*, Arrian, the *Attica* of Jacobs, the *Iliad*—and, cursorily, the *Iliad* or *Odyssey*; for Class III., Isocrates, Lysias, Lycurgus, Herodotus, Xenophon's philosophical works, Euripides—and, cursorily, the *Iliad*; for Class IV., Demosthenes, Plato, (the *Critias*, *Apologia*, *Laosha*, *Menæmus*,

Charmides, Protagoras, Phædo, Gorgias,) Sophocles, *Æschylus (Prometheus and Pæras,)* and Theocritus. Manuals: Buttman's Grammar and Halm's Reader. No excuses from the course are now allowed.

Hebrew is commenced in the gymnasium as an optional. It is worthy of remark that different manuals are used in the Protestant and Catholic gymnasia: the grammars of Thiersch and of Gläser and Schmitter.

French was restored to its place as an obligatory study by the revised ordinance of 1854, for the first time since it held that place by the arrangements of 1808 and 1816. This study, which is commenced in the gymnasium, is pursued with special reference to the grammar in the two lower classes, and to the literature of the language, with exercises in speaking, in the two upper ones. Special teachers are usually employed for it. Manuals are the grammars of Ahn, Eisenmann, Claude and Lemoine, Betlinger; chrestomathies and readers of Ahn, Seyerlen, Süpfle, Gruner, Wildermuth, Lüdeking, Mager, Vinet.

Instruction in German is given in all the classes of the Latin schools: both theoretic (grammar) and practical (making sentences, compositions—the revised ordinance especially recommending, for classes I. and II., the emendation of sentences given out in a defective condition—and making verses,) as well as learning by rote and reciting. In the gymnasium, exercises in correct oral and written expression are given, by means of compositions, for which collections of maxims are recommended, and analytic discussions of what has been read, with attempts at stating independent opinions on them; and, besides these, the pupils are made as familiar as possible with the best writers. In the two upper classes, a historical view is given of German literature, from Ulphilas to Klopstock, with an explanation of selections from the *Nibelungen Lied*, *Gudrun*, &c.; and the theory of poetry and oratory is studied. Manuals: the grammars of Heyse, Kehrein, Bauer, Göttinger, Wey; readers of Wackernagel, Döderlein, Kehrein, Hopf; histories of literature by Pütz, Beilhack, Hamberger; rhetoric and poetry by Schmeisser, Richter, Uschold, Heinsius, Bone.

History is studied in a twofold course; the first being, in Class III. of the Latin school, a general chronological view of the most important occurrences and those connected with the most important persons of Greek and Roman history, including the period of the migration of the nations; and, in Class IV., a succinct view of the German and Bavarian history. The second course includes universal history: in Class I. of the gymnasium, ancient, down to Augustus; in Classes II., III., and IV., medieval and modern, especially Bavarian; in relation to which, however, the decision of 1851, that in the two upper classes the summer months should be devoted exclusively to Bavarian history, was not repeated in the revised ordinance of 1854. Nor is the acquirement of a number of chronological dates, (twenty-four in the Latin school, and one hundred and thirty-seven in the gymnasium,) as prescribed by reason of Lorinser's complaints, in 1837, retained in the revised ordinance. The manuals for this study are selected according to the confession of each institution. In the larger

gymnasia, separate historical instruction is usually given to those of the confession in the minority. Full information is given on the previous ordinance on this subject in Mutzell's "*Gazette of the Gymnasia*," (*Zeitschrift für das Gymnasialwesen*,) Vol. III., p. 508, &c. Manuals are general Protestant histories of Dittmar, Dietsch, Beck; Catholic ones by Walter, Uschold, Pütz, Beitelrock; German histories by Kohlrausch, Uschold, and Beitelrock; Bavarian histories by Millbiller, Böttiger, Heilmann, Spruner, Heinisch.

The geographical instruction in the four classes of the Latin school includes, for Class I., a view of the five quarters of the earth; for Class II., Europe, and especially Germany, with special reference to highlands and drainage; for Class III., the non-European divisions of the earth; for Class IV., a more thorough investigation of what was previously studied, with more reference to political and statistical relations. In this, by reference to important historical occurrences, history and geography are brought into connection; and, on the other hand, in the gymnasia, where no special instruction is now given in geography, reference is to be had, in the historical recitations, to the repetition and extension of acquirements in geography. Manuals: those of Raumer, Daniel, Arendts, Schacht, Burger, Bolger, Kleinstäuber.

Natural history is studied only in such Latin schools as have real courses connected with them.

In arithmetic, Class I. of the Latin school repeats and pursues the study of the four ground rules of arithmetic in definite and indefinite numbers, vulgar fractions, and mental computations; Class II., decimals, beginning of proportion with indefinite numbers, proportion with definite numbers; Class III., proportion with definite numbers, including alligation and fellowship; Class IV., the theoretical confirmation of the previous course, approximating fractions, extraction of the square and cube roots, but without the theoretical demonstration. The mathematical instruction in the gymnasium includes, in Class I., arithmetic with letters, through the four ground rules, which serves as a theoretical confirmation of the portions studied in the two first classes of the Latin school, theory of proportions, and equations of the first degree; in Class II., powers and roots, equations of the second degree, logarithms, and progressions; in Class III., planimetry, strictly on the heuristic or inventive system, and therefore mastered but slowly; in Class IV., stereometry and plane trigonometry. Manuals: those of Mayer, Schwerd, Neubig, Pollak, Hoffmann.

Physics are studied only in the two higher classes of the gymnasium. Class III. pursues the explanation of so many of the chief principles of the theory of natural science as are necessary in order to be able, by means of them, and of the mathematical acquisitions of the gymnasium, to pursue further principles with certainty. Class IV., besides continuing the application of mathematics to physics, studies mathematical and physical geography. Manual: Koppe's.

Instruction in the rudiments of philosophy, since being withdrawn

from the gymnasia and transferred to the lycea in 1816, and afterward to the lyceal class in 1824, appeared only incidentally in the school-plan of Thiersch, of 1829, (logic and dialectics—introduction to the philosophy of the ancients,) and has since 1830 been still further excluded.

For gymnastics, the latter hours of the two vacant afternoons, (Wednesday and Saturday,) of the summer, are used. As to pursuing private studies during the time of the two higher classes, there is neither any legal prescription nor any general rule.

A ministerial rescript of 1819 confirms the existing provision which prohibits teachers from giving private instruction to their pupils. The school-plan of 1824 particularly prohibited teachers from "giving private instruction, which is a hindrance to their official duties;" in connection with which an increase of pay was promised. Although the promise was afterward retracted, the prohibition remained in force, and was repeatedly enjoined; once in the general terms last above given, and once in the other restricted ones. The latter sense may be supposed to be that of the authorities.

In many places the gymnasium library is accessible to the pupils, in others there are special pupils' libraries. There is no general law as to the funds for these libraries. Gifts from graduates to the school-libraries occur only in isolated cases.

As to the standing of the scholars, a general direction was first given by the general law of 1818, with reference to the importance of this standing in respect to the law of conscription. This law (of 1812) allowed to those who should have been among the best one-third of all the classes in the gymnasium, exemption from the levy. A later law, in 1830, confined this privilege to the best one-fifth.

The excessive number of examinations prescribed by the revised ordinance of 1854 was made more reasonable by a ministerial rescript of 1856; and the present arrangement is, that there are in the Latin school two examinations a month in Latin, one a month in Greek, three a term in German, and twice a term each in arithmetic, geography, and history. In the gymnasium there is monthly one in Latin and one in Greek, from two to three a term in German and mathematics, and two a term in French and history. In computing general progress, attainments are marked in Latin under four heads; in Greek and German under three; in mathematics, history, and French under two; and in geography under one. There is also a written examination four times a year in religion; attainments in which are not charged, but are entered on the annual catalogue in Roman figures from I. to IV.

What precedes shows clearly that the system of class-teachers prevails throughout; all instruction in language, history, and geography is given by them. Class-books, for entering tasks, absences, penalties, &c., are not frequent. The disciplinary regulations, as drawn up at the institution and confirmed by the government, are either given to the scholars in a printed form, or read over at the beginning of the school-year.

In each class annual rewards are given for general progress, at the rate

of a prize for every eight scholars. Rewards for single studies, except those for religion,* were discontinued by the revised ordinance.

The pupils in the Latin school are addressed as *Du*, in the gymnasium as *Sie*.† Annual testimonials are given to the pupils—marking capacity as very great, great, sufficient, and weak; deportment as very praiseworthy, praiseworthy, satisfactory, and not free from blame; diligence as very great, great, sufficient, and small; and progress as very good, good, moderate, and small; and, in the gymnasia also, as remarkable and distinguished. Smoking and going to taverns are forbidden to all the classes. With us no complaint can in general be made of the deportment of the pupils, disobedience, loose or forward conduct, &c.; as to which complaints are elsewhere made. Boarding-houses for out-pupils are selected by the rectors. Board costs, per year, in citizens' houses, not less than one hundred and forty florins; in good families, not than less one hundred and eighty florins.

The school-year is from the 1st of October to the 8th of August. Between the winter and summer terms there is only one week's vacation, at Easter. The school-year closes with a formal distribution of prizes. The festival for youth, previously observed on the 1st of May,‡ was discontinued in 1854, on account of the bad influence on the pupils of the preparations for the musical and declamatory exercises of the occasion. At the end of the school-year an annual report is published, to which a programme is commonly added, written in a regular succession, in which the teachers may have their turn. Programmes are exchanged with Baden and Coburg-Gotha.

For the three lower classes of the Latin school, there is a public examination at the end of the year. The members of the fourth class, who are about entering the gymnasium, are examined orally and in writing at the beginning of the school-year; those who are to enter other pursuits, at the end of it. For the three lower classes of the gymnasium, there is no annual examination. The graduating examination of the fourth class is, so far as it is oral, conducted by a ministerial commissary, usually a university professor. The written portion of it comes in the beginning of June, lasts through three days, and includes the execution of six tasks, which the ministry sends, sealed, to the rectors: in religion, translation from German into Latin and Greek, mathematics, German composition, and history. The means of assistance allowed are dictionaries and tables of logarithms. The work, when corrected, is sent to the ministry, and committed by it for revision to qualified censors.

In all three of the universities there are "seminaries," with allowances

* "Prizes for religion are to be given only to such scholars as, besides thorough knowledge in that important branch, have clearly a high position among their fellow-scholars for piety and religious feeling."—*Ed. of Ensay.*

† The latter being more respectful; somewhat analogous to our "Mr." for a student and "Master" for a boy.—*Eng. Transl.*

‡ First introduced in 1810, "in memory of the constitution of the kingdom, proclaimed on that day in 1808, and of the union thereby brought about into one monarchy of provinces before separate."

for the seminarists; for whom also, in Erlangen, practical exercises are prescribed, besides those in philology. No allowances are made to the candidates for their traveling expenses.

Up to 1858, there were two different examinations for the places of teacher in the gymnasium and in the Latin school; the former held at one of the universities, the latter under the direction of the circle governments, by a gymnasium rector, together with some gymnasium professors. A university course was required only for the former. The same sufficed for the latter, as however did also the course at the lyceum. For such as proposed to instruct the two lower classes only, attendance at the gymnasium was sufficient. These regulations were repeated in 1834; but in fact the appointment of teachers of the lower classes without a university education was quite out of use, or rather was never in use: and the Latin schools were supplied with teachers from amongst clergymen who had passed the examination for teaching in them, and in part with students in philology, who had passed examination for teachers of gymnasia, but were obliged to begin in a low place. Since 1858 there has been but one kind of examination, held annually in Munich by a commission of one professor of philology from each of the three universities and two professors in gymnasia. Candidates marked I. and II. are declared capable of teaching in a gymnasium; those marked III., in the Latin school. No definite time is now required to be passed as an assistant; the ordinance of 1830 having required two years of such assistantship. Some begin their duties as assistants or inspectors of charitable foundations for students, others as teachers of Latin schools. The ordinance of 1834 says: "As between candidates having the same marks and otherwise similarly circumstanced, the preference will be given to whichever one shall, together with thorough classical training, unite the thorough mastery of some one pursuit;"—"theological or other branch," says a ministerial instruction of 1838. This arrangement is not revoked by the revised ordinance of 1854.

The parishes have the right of choosing the teachers of some isolated Latin schools, the choice to be confirmed by the circle government. This may permit them to follow the opinion of a gymnasium rector in filling the place.

The teachers of Latin schools, or, as they are called, study-teachers, (*Studienlehrer*), are obliged to teach for from eighteen to twenty hours a week; those of the gymnasia, who are entitled "professor," from fifteen to seventeen hours. The rectors and gymnasium and Latin school teachers are obliged to wear an official uniform, and those of clerical condition a different one. The rectors are obliged to wear this uniform only on solemn occasions, being permitted at other times to dress as they choose.

The provisions as to salaries since 1850 make the salary of a Latin school teacher, at commencing, six hundred florins, to be increased one hundred florins every six years, until with the twenty-fifth year the maximum of one thousand florins is reached. The salary of the gymna-

sium teachers begins with eight hundred florins, and rises by the same rule to twelve hundred florins.

The king reserves to himself, in some cases, the grant of this six-yearly increase. The rector has an additional official salary of two hundred florins. Teachers have no additional perquisites or immunities. If a Latin school teacher becomes a gymnasium teacher, the years of service in the former place are credited to him.

Gymnasium teachers enjoy the privileges granted to state employes in appendix IX. to the constitution. Latin school teachers were formerly not entitled to them; but those in complete Latin schools, excluding isolated ones, were admitted to the same in 1845. The same law establishes the definitive character of an appointment after a provisory term of three years, and provides for the right to retire after forty years' service, or at the seventieth year of age, or before that time by reason of failure of health; and also for a pension to the widow in case of death. The receipts of state employes consist partly of permanent and partly of service-salary. The permanent salary, that is, that part of the salary which the officer continues to receive after retiring, is fixed by the constitution, for the first ten years of service, at seven-tenths of the entire salary; for the second ten years, at eight-tenths; and for the third, at nine-tenths; unless a different provision is made by the terms of the appointment. An ordinance of 1849 provides further that, for salaries up to twelve hundred florins, inclusive, no distinction between permanent and service-salary shall be made in the appointment; and a second ordinance of the same year, that the six-yearly additions granted to teachers of gymnasia and Latin schools, in 1845, as revocable official emoluments, should be considered fixed and actual portions of their salaries, and so considered in computing pensions and widows' pensions. Salaries of gymnasium teachers are similar to those of circle assessors and city justice councilors. Cashiering, dismissal, or degradation from the grades of teachers' appointments is determined with reference to circumstances of service, on judicial investigation. Disciplinary penalties are also determined by appendix IX. of the constitution. The widows' pension, for all public employes who pay one *per cent.* of their income to the fund for the purpose, is one-fifth of the salary which the husband received; and one twenty-fifth of it for each child, until twenty years of age.

There are no teachers' associations, journals, &c.

II. *The Real Schools*.*—The first public institutions for real education were established in consequence of the school system of the year 1808, by which real schools and real institutes were set up, parallel with the progymnasium and gymnasia. The former, for educating pupils from the tenth to the fourteenth year, were to teach German and French, drawing, elements of natural history and of mathematics, and thus to give a general education preparatory for life as a citizen. The latter were to add to this previous and elementary course further study of the natural sciences

* (Sources: Döllinger's "*Collection of Bavarian Ordinances*," Vol. IX., part 3, § 1034—1069; Von Hermann's "*Contributions to the Statistics of Bavaria*," Vol. V., 1855; the printed annual reports of the various institutions, from 1809 to 1857.)

and mathematics, history, general philosophical studies, and German, French, and Italian languages and literature. The real institute was divided into four courses, of a year each, like the gymnasia, and was to be an introduction to academical studies, and especially a preparatory institution for future financiers and students of natural science; and the forester, the artist, and even the merchant, were here to receive a higher, variously useful, and general education. The real schools, of from two to four classes, were erected in all the larger and in most of the middle-sized towns, partly by themselves and partly in combination with a gymnasium. Real institutes and real schools together were erected only in Nuremberg and Augsburg. The standard of organization and development in this school system was reached only in the institution for real studies in Nuremberg, which, under director G. H. Schubert, and with such assistants as Pfaff, Schweigger, Erhardt, and Kanne, grew so rapidly in a few years as to complete the entire course of study in seven classes, and to contain, in 1818, about two hundred scholars. But, even here, results did not fulfill expectations. It became apparent that the edifice was without a sure basis, and that the proposed scientific education of the pupils could not be attained without any knowledge of the classical languages. And as for the civic employments, to which the very great majority of the pupils devoted themselves after their fourteenth year, a sufficient preparation could be had in a simpler manner and with less expense: the real institutes were discontinued by a rescript of August 24, 1816, and the real schools, soon afterward, (Sept. 28, 1816,) changed into higher burgher schools.*

This change placed the real schools on a lower grade. For, being confined to the years from the eleventh to the fourteenth, these higher burgher schools, so far as general subjects of education are concerned, were but little above the upper classes of a well-organized common school; and in the studies appropriated to them, (drawing, mathematics, and French,) they confined themselves almost universally to their elements. Separate parishes sought to supply these deficiencies, as did private associations and the circle governments, by artisans' schools, private institutions, and polytechnic institutions, in which were taught particularly the arts of design and mathematics. But as this half-measure could not give thorough organization and symmetry to the system of instruction, King Ludwig I., in order to direct the whole real school system into a new path, by an order of Feb. 7, 1829, and by a more stringent one of Feb. 16, 1833, decreed the establishment of institutions of technical instruction in all the larger cities of the kingdom. The latter of these, to which the present system may be referred, discontinued the higher burgher schools, devoted their funds to the new technical institutions, and laid down those outlines of a course of instruction for the latter which were carried out in more detail by a subsequent decree of April 4, 1836. According to this, the purpose of the technical institutions is "to carry

* Hopf, "*Progress of Real School System in Nuremberg.*" Fürth, 1854. G. H. von Schubert, "*Autobiography.*" Erlangen, 1835. Part II., pp. 435, 495.

the arts into industry, and to put industrial pursuits themselves upon a footing corresponding to the progress of technical art and the competition of foreign industry." Accordingly, the technical schools have their central point in the exact sciences; and are intended to be preparatory for 1. The artist's vocation proper; 2. The technical branches of the public service, especially architecture, mining, salt-works, and forests; 3. For technical departments auxiliary to civil life; 4. For strictly civic vocations, particularly improvements in manufacturing, productive labor, and the improved cultivation of the soil.

ORGANIZATION OF THE TECHNICAL SCHOOLS.

1. *The agricultural and industrial schools, or technical gymnasium.*—

This, as a rule, receives no pupils less than twelve years old, and requires, in order to entrance, completion of the course in the Latin school, or evidence of thorough elementary training in German and arithmetic. The course includes three years. There are at present twenty-six of these institutions; viz., eight circle agricultural and industrial schools, at Munich, Passau, Kaiserslautern, Ratisbon, Bayreuth, Nuremberg, Würzburg, and Augsburg; seventeen other complete agricultural and industrial schools, at Freising, Landshut, Straubing, Speyer, Landau, Amberg, Bamberg, Hof, Wunsiedel, Fürth, Ansbach, Erlangen, Aschaffenburg, Schweinfurt, Kempten, Kaufbeuren, Nördlingen; one incomplete industrial school, with two courses, at Zweibrücken (Deuxponts.) A few of these, as Kaiserslautern and Bamberg, have a preparatory school, to give a proper introduction to the lower course; and with all of them is connected, according to law, an artisans' Sunday and feast-day school, for apprentices and journeymen.

2. *The polytechnic school, or technical lyceum*, which includes the department of higher instruction, and has also three years' courses. The requisites for admission are fifteen years of age, graduation at an industrial school or gymnasium. Partial scholars for single branches must pass an examination in testimony to the required attainments. There are polytechnic schools in Munich, Nuremberg, and Augsburg.

3. The final completion of the course of technical instruction is given 1. For the department of public architecture, in the course of engineering connected with the polytechnic school at Munich; 2. For mining, foundries, and salt-works, by the two years' course in the department of public economy in the University of Munich; 3. For the higher forestry department, (to succeed the course of the gymnasium or industrial school,) a three years' course at the university, or one of two years at the Royal Forestry School at Aschaffenburg, to be followed by one year's study at the university; 4. For higher education in agriculture, (to follow the completion of the course of the agricultural and industrial school,) a two years' course in the Central Agricultural School at Weißenstephan, near Freising; 5. For the fine arts and civil architecture, the Royal Academy of Arts in Munich.

Course of Study.—1. Agricultural and industrial school. By the order of April 4, 1836, the instruction is divided into, *a*, that in purely technical departments, which are 1. industrial and 2. agricultural; *b*,

real instruction, in religion, German, history, geography. A completed agricultural course is pursued at few schools—at Nuremberg, Würzburg, and Freising; most of them restricting themselves to agricultural encyclopædia and a few practical exercises. A few, as those at Fürth, Wunsiedel, and Zweibrücken, have not even this. The scholars at these schools were at first sent to the gymnasia and the Sunday schools for their real instruction; but at present special teachers are employed in all the technical schools for these branches. The course has gradually come to include the additional studies of French, calligraphy, and, in some institutions, singing and stenography. The lectures are at present classed as follows:—

A. IN AN INDUSTRIAL SCHOOL PROPER.

	Year: I.	II.	III.
Religion,	2	2	2 weekly.
Arithmetic, (algebra and geometry,).....	6	6	6 "
Natural history,.....	4	1	1 "
Chemistry,.....	—	2	3 "
Physics, (mechanics,).....	—	4	3 "
Technology,.....	—	2	2 "
Drawing, (modeling, wax-figures,).....	8	8	8 "
German,.....	5	4	4 "
History and geography,.....	2	4	4 "
French,	2	2	3 "
Calligraphy,	2	—	— "
	—	—	—
Total,	31	35	39

B. AGRICULTURAL DEPARTMENT, (NUREMBERG.)

	Year: I.	II.	III.
Religion,	2	2	2 weekly.
Theory of agriculture,.....	4	8	8 "
Natural history,...	5	—	— "
Natural science, (physics and chemistry,).....	—	6	5 "
Veterinary surgery and anatomy,.....	—	—	3 "
Arithmetic and geometry,.....	4	4	2 "
Drawing,.....	3	4	4 "
German,.....	4	4	3 "
Geography,.....	2	—	— "
Calligraphy,.....	2	—	— "
	—	—	—
Total,.....	26	28	27

There are also practical exercises in agriculture in all three years; in all about thirty hours a week.

Observations.—Those industrial schools which propose to instruct in agricultural encyclopædia mostly devote to this department two hours a week in each year; but some unite the agricultural instruction with that on natural history. The practical exercises are given according to the apparatus of the school and the opportunities of its situation. Instead of the agricultural instruction, or sometimes in addition to it, there has

been established in several cities a special course for those intending to become merchants. Thus there are trade departments at several industrial schools—as Augsburg, Fürth, Bamberg, Würzburg, Kaiserslautern, Passau, Freising—which teach French, English, and Italian, mercantile arithmetic, knowledge of goods, and book-keeping. Gymnastics are introduced in only a few institutions.

2. The polytechnic schools teach the following studies: pure mathematics, demonstrative and practical geometry, theoretical and analytical chemistry, physics, analytic and applied chemistry, drawing (extensively, including architectural drawing and machine drawing,) rudiments of molding and founding, practical work in the mechanics' shops. Religious instruction, which is given at Nuremberg to the lowest class only, at Munich also to the second, at Augsburg to all three in common, includes doctrine and morals, and a summary account of the history and legislation of the church. The number of lessons per week, not including labor in the workshops, varies between twenty-eight and thirty-six; and they are arranged according to the exigences of the establishment. The course of engineering at the polytechnic school at Munich includes the following studies: road-making, bridge-building, and hydraulic architecture, theory of construction and tracing outlines, theory of stone-cutting, practical geometry, civil architecture.

Teachers.—The system of teachers for each study (*Fachlehrer system*), is the rule in all the technical schools; several related studies however being usually intrusted to each teacher. In some of the larger institutions, also, several teachers are employed for one study, especially for drawing. A fixed number of six teachers was at first fixed upon for a complete agricultural and industrial school, as well as for each polytechnic school. But the extension of the course of instruction, and the consequent increase in the number of scholars, which made parallel classes necessary at Munich, Augsburg, Nuremberg, and Bamberg, caused also an increase in the number of teachers; and now there are, at some of these schools, as many as twelve or fifteen teachers, besides supplementary and assistant teachers. In all the technical schools there are now two hundred and sixty-five teachers; of whom two hundred and thirty-two are employed in the industrial schools, twenty-seven in the polytechnic schools, and six labor in both. Teachers of mathematics and general sciences are appointed, either after proof of completing the course at the gymnasium and polytechnic school, and of at least one year at the university, or after an examination, to be passed by the candidates for lower places before a commission from the polytechnic school and for the higher before one from the University of Munich. Many of the present teachers, however, were trained not at the polytechnic school, but at the gymnasium, studying longer afterward at the university. Some were appointed, also, on account of distinguished attainments in technical literature or practice. Teachers of drawing are appointed on proof of a completed course at the industrial school, and of attendance at the Royal Academy of Arts, where an examination has to

be passed. Teachers of real studies must show capacity for the place of teacher in a gymnasium, except in Greek. These requirements are very little enforced any where; and, in fact, real studies are almost every where taught by common school teachers, pastors, or theological candidates. Religious instruction is given either by classes of the clergy or the pastor of the parish. Teachers in the industrial schools may be appointed by such parishes as have been efficient in establishing the institution, on presentation by a magistrate; but also commonly upon the proposal of or examination by the school overseer, the interposition of the circle government, on a ministerial rescript. This appointment carries no right to a pension. The annual salary of a teacher, employed from eighteen to twenty-four hours a week, was originally five hundred florins, with no prospect of increase. Since 1851 the salaries of this class of teachers have been put on the same footing with those of the Latin school teachers; so that the salary is at first six hundred florins, and increases by one hundred florins every six years up to a maximum of one thousand florins. Teachers of the polytechnic schools are appointed directly by a royal decree, which gives him the title of professor, and the privileges of a state official. An ordinance of Feb. 12, 1855, prescribes for them the uniform of a lyceum professor, which consists of a dark blue coat or dress-coat, with a violet-colored standing collar embroidered with gold, and velvet wristbands, yellow metal buttons with the crowned lion, white or blue pantaloons, and *bouillons* on a golden hat-band and on the sword-tassel. The salary, first fixed at six hundred florins, is now eight hundred, and rises six-yearly to twelve hundred florins. In some cases, especially in cases of invitations from abroad, the teachers of technical schools receive a higher salary from the first, or before the six years' term is out. In case of transference from an industrial to a polytechnic school, the time of service already spent is reckoned. Teachers of religion and assistant teachers are usually paid at the rate of twenty-five florins a year for each hour employed per week.

Supervising authorities.—The immediate management and charge of the discipline accompanies the rectorate, which is usually conferred upon one of the teachers of the institution distinguished for literary attainments, experience, and reputation. In some places, however, the rectorate of the industrial school is conferred on some one else; at Bamberg, Hof, and Wunsiedel, on one of the city officers, a counselor of justice, or mayor; at Ratisbon, Freising, and Bayreuth, a professor, or the inspector of the classical school. Under the original ordinance, the rector of the polytechnic school was to be at the same time inspector of the industrial school of the place. This union of offices now, however, exists only in Augsburg. The rector is allowed an additional salary of two hundred florins, and usually a rent-free tenement in the school-building. The rector's necessary acquaintance with the condition of the school is by law to be obtained by attending the recitations, at such intervals as he may judge proper; by conferences, to which all the teachers are invited, at least four times a year; by special interviews with individual teachers;

and, in most institutions, also by a weekly or monthly examination of the diaries or class-books in which teachers, or pupils under their direction, have entered the subjects dealt with, together with remarks on any particular occurrences, such as absences or reprimands. The rector has, as advisory co-authority, a school council, (*scholarchat*,) to consist of a clergyman of the place, a magistrate, one of the parish authorities, and a mechanic. This body has, however, only very seldom found actual employment; and has almost every where gone into disuse. The rector's report is sent to the royal circle government, and through that, or in special cases directly, to the royal ministry of state, of trade, and public works; to which a separate report is to be made for the technical schools. Ordinances and other laws go downward through the same channel. Religious instruction is, by the constitution, under the co-inspection of the higher church authorities, who devolve the charge upon some clergyman of the locality, usually a dean or senior pastor. Their delegate, also, from time to time, makes a visitation with reference to religious instruction. Watching over attendance at church and other religious exercises is sometimes left to the rector, sometimes to the religious teacher, sometimes to the parents.

The disciplinary regulations are drawn up for each institution by its rector in conjunction with the council of teachers; and, on approval by the circle government, is printed, and given to each scholar at entrance. It is also commonly read at the beginning of the school-year. The common usage is that the teachers deal with lesser transgressions within the school, and greater ones are brought before the rector. The grades of punishment in an industrial school are, admonition or reprimand before one witness, or before the council of teachers; arrest in school; imprisonment in the school *carcer*; threatened dismissal; exclusion from the school, or even from all the technical schools of the kingdom. The rector judges of what grade of their son's punishment parents shall be informed. In the polytechnic school the grades are, admonition, reprimand before all the teachers, dismissal. As to regulations outside of school, the industrial and gymnasium scholars are on the same footing as are the polytechnic and lyceum ones. The former are strictly prohibited from going to taverns and smoking; the latter are subject to the police ordinances. There are no foundations for the support of students in these schools. Industrial scholars from abroad must select a lodging or boarding-house, with the approbation of the rector asked and obtained. Those of the polytechnic school are, at least, obliged to advise the rector of their lodging, and he may object to it. In all these schools the rector has the services of a beadle, for disciplinary purposes and subordinate services, and sometimes as a secretary.

Attendance.—The number of pupils in the technical schools has steadily increased. During 1835 the whole number in the industrial schools was only 1,450; but in 1852 reached 2,549. That at the polytechnic schools rose from one hundred and seventeen, in 1840, to two hundred and twenty-six in 1852. To these should be added the city

trade school at Nuremberg, with two hundred scholars; making, for 1852, a total of 2,975 regular pupils. There are about two hundred partial pupils at the polytechnic schools, and 6,510 citizen feast-day scholars. As the attendance at the polytechnic schools is far less than that at the industrial schools, so also are the upper courses at the latter much more thinly attended than the lower; as most of the pupils, before they have graduated, and even in the middle of a school-year, enter into civic employments. The number of pupils in the first year is generally to that in the third as five, and in some schools as eight, to one; and, at the end of the last year, the classes are sometimes reduced to five scholars.

The age of the industrial scholars is between twelve and twenty; usually between thirteen and seventeen. That of the polytechnic scholars between fifteen and twenty-four; usually between sixteen and twenty.

Of the 2,975 regular pupils in all the technical institutions, 1,378 are Catholics and 1,432 Protestants. Most (one hundred and sixty) of the rest are Jews, who are chiefly in the trade departments. As the number of Catholics in Bavaria is 8,241,345, and of Protestants, 1,255,562, being thirteen to five, it appears that the Protestants have much the strongest tendency to arts and trade. The Protestants send one scholar to every eight hundred and ten of their population, the Catholics only one to 2,582. It is otherwise at the universities, where the Catholics are to the Protestants, omitting theological students, as four to one. Among the six industrial schools, those of Nuremberg, Munich, Augsburg, Würzburg, Bamberg, and Kaiserslautern, are, either absolutely or relatively to the population of their cities, the largest. Of the polytechnic schools, that at Munich is the largest.

Expenses. The expenses of a circle agricultural and industrial school were originally fixed to be between a minimum of 8,800 florins and a maximum of 8,500 florins. At present the expenses of an industrial school are from 4,000 to 16,000 florins. This regular amount is drawn 1. From the funds of the discontinued higher burgher schools, which give, at some places, as Munich and Nuremberg, an annual income of more than 8,000 florins and a total annual income of 28,000 florins; 2. From the aids of the circle treasuries, the total of which was, in 1836, 52,360 florins, in 1832, 103,992 florins. From this source some institutions, as Nuremberg, Kaiserslautern, receive from 7,000 to 10,000 florins a year; 3. From a disposable overplus from the funds for instruction; 4. From contributions by the parishes; 5. From a tuition-fee, which is not to exceed twelve florins a year. But all the schools have many free pupils, and some of them demand no fee whatever. The total expenditure for industrial schools was, in 1851-2, 152,990 florins, of which about 114,000 was for salaries and 88,000 for other expenses. The buildings of the circle institutions are erected or adapted at public expense; those of other industrial schools by the municipalities, with aid from the circle treasuries, and partly from the tax on local sales of malt, which some of the cities have devoted to the establishment of technical institutions. The trade school in Nuremberg is supported chiefly from a tuition-fee

of eighteen florins and a matriculation-fee of one florin and twelve kreutzers, which produces, including the preparatory class, about 7,000 florins a year. The balance, about 4,000 florins a year, is paid from the city treasury.

The polytechnic schools, being strictly state institutions, are almost entirely maintained from the central and circle treasuries. These advanced, in 1886-7, 37,000 florins; in 1881-2, 40,160. The rest, about 3,000 florins, was contributed by the municipalities. The tuition-fee was for a long time very low; as the first intention was that natives, and those belonging to the states of the Zollverein, should receive instruction free, and that other pupils should pay twelve florins a year, and partial students six florins, for each study pursued. It is only lately that a regular tuition-fee was required of twelve florins a year. Besides important aid to the polytechnic schools, the public treasury gives to some indigent and worthy pupils, especially in the engineering department, annual aids from the general salary fund of as much as ninety florins.

Text-books and apparatus. Instruction in the industrial schools is based, for each branch, upon printed manuals, selected by the college of teachers, and approved by the ministry of state. Sometimes the introduction of text-books is specially recommended to the rectors from the highest quarter. Dictating lectures, long practiced in many schools, have gradually been disused under repeated prohibitions, and are expressly permitted only in the polytechnic schools, which are expected to keep their pupils acquainted with the progress and latest discoveries of technical knowledge. Among the text-books most used are Fűrnrrohr's Natural History and Technology; R. Wagner's Chemistry and Technology; Brettner's Physics; Haindl's Machinery; Fraas' School of Agriculture; the arithmetical and algebraic text-books and collections of problems of Hirsch, Hermann, and Hofmann; Gugler's Descriptive Geometry; Ahn's Practical Course in French; Zahn's Biblical History. Many other works are used in some places: such as the mathematical text-books and collections of problems of Bergeat, Wiegand, Rose, Bischoff, Ahrens, Sadebeck; the mercantile arithmetics of Feller and Ordermann; Kittel's Botany; Kobell's Mineralogy; Koppe's Zoology and Physics; Regnault's and Stockhardt's Chemistry; the German grammars and manuals of style of Bauer, Brentano, Falkmann, Gockel, Heyse, Kelle, Lechner, Puchner, Schätzler; various collections of models of composition; Hirzel's and Ludecking's manuals and readers in French; the historical text-books of Walter, Kohlrusch, Beck, Liebler, Ghillany, Bumüller; the rudimentary geographies of Burger, Völter, Schacht, Hopf, Zachariä; in arts and trades, the works of Schiebe, Telschow, Nelkenbrecher, and others. The Royal Academy of Arts was, at the establishment of the industrial schools, charged with the duty of preparing copies for drawing; which included, especially, ornaments and architectonic studies, in a systematic order, from the elements up to complete plans for buildings. But much use is also made of the collections of designs of Klenze and Gärtner, (which were particularly recommended from the highest quarter,) of

Heideloff, Weiss, Wolff, Pola, Metzger, Haindl, Herrmann, Schöpf, and others. Some teachers have prepared designs for their own instruction. Besides a comprehensive and well-arranged collection of such designs for instruction in drawing, may be mentioned, as properly belonging to an industrial school, models for instruction in mechanics and modeling, a cabinet of natural history, a technical library, a physical and chemical apparatus, and a laboratory. Many of the industrial schools also possess a mechanical workshop. For the course of instruction in agriculture, either small pieces of land are procured and made model farms or experimental gardens laid out. A collection of manufactured articles belongs especially to the trade departments. The polytechnic schools have an apparatus and collections like those of the industrial schools, but more complete.

To procure, maintain, and enlarge the apparatus for instruction, annual sums of from four hundred to two thousand florins are appropriated, according to the total expense of the school. There are also frequent gifts for the same purpose from the circle governments, parishes, industrial societies, and private individuals—as druggists, manufacturers, and book-sellers. Many instruments and models have also been made in the workshops of the technical institutions. The largest and most valuable collections are in the polytechnic schools and circle industrial schools; but most of the other institutions have very well furnished cabinets. The libraries usually contain, besides works on the appropriate technical subjects, miscellaneous books, which the pupils can read at home.

School-year; examinations; prizes.—By the ordinance of April 4, 1836, the year of the industrial school began October 15, and closed August 31; a later ordinance fixes the beginning on October 1, and the end on August 31. There is a fourteen days' vacation at Easter. There are no vacant afternoons, except in a few schools or classes. The year of the polytechnic school is from November 2 to August 15. There is no other interruption of the lessons, except the two weeks at Easter. Three times a year—at Christmas, Easter, and Whitsunday—there are, at most of the industrial schools, written or oral examinations in all the studies, a report of whose result is given to each pupil, to be sent to his parents. At some institutions there are monthly examinations. During the last weeks of the school-year there is a public examination, attended by a commissary from the state ministry of trade, who is, for the industrial schools, a professor of a polytechnic school, and, for the polytechnic school, a university professor, and who has special instruction and powers. Each pupil receives an annual certificate for industry, progress, and moral conduct. The marks for progress are, in the industrial school, I., excellent; II., very good; III., good; IV., moderate; V., bad. In the polytechnic schools the grades are marked by decimals, and are, 1.00 to 0.74, excellent; 0.74 to 0.50, good; 0.49 to 0.25, moderate; 0.24 to 0.00, bad. For religious knowledge, religious character, and moral conduct, the following grades are marked in all the technical institutions: I., 1, distinguished; I., 2, excellent; II., 1, good; II., 2, moderate; III., 1, poor; III., 2, bad. Pupils successfully completing the highest course

receive a certificate of graduation from the examining commissary and the rector, which is to be shown at entering the higher institutions or the public service. The commissary makes a report immediately to the ministry on result of the examination and the condition of the whole institution. The prizes, at the industrial schools, are distributed at the examinations. There is usually about one prize to each ten pupils for general progress, and one prize in each year for each study; although the latter prizes are, in many institutions, not given. Books are most often given as prizes; frequently, however, instruments and medals. At some of the artisans' Sunday and feast-day schools, by recommendation of the superior authorities, distinguished progress is rewarded with a savings-bank book, for amounts up to ten florins. In the polytechnic schools, prizes, though provided for in the ordinance of 1836, are quite disused. Speaking on such occasions, as at the gymnasia, is not recommended; but in many institutions the distribution of prizes is opened or closed with an address by the rector. On the last day of the year, a printed annual report is published, stating the subjects of instruction, the names of pupils, alphabetically arranged, usually with their marks for progress, generally and in each department, and a short account of the school for the year, with statistics. This report, with the scientific or technical treatise usually added by one of the teachers, is sent to the city authorities, to the royal government, and to the ministry of state, to all the technical institutions of the kingdom, and, by agreement, to some other schools in Bavaria, and technical schools abroad.

Criticism; future prospects.—While the course of study in the old real schools included the studies generally necessary and useful for the higher class of citizens, the present class of real institutions aims directly at preparation for particular vocations. Their course, well calculated for the advantage of industrial occupations, is now generally admitted to have grave faults. In the first place, notwithstanding the purpose expressed in the title of the technical schools, they attempt various inconsistent objects. Instruction given with reference to the higher courses and institutions, as well as to the technical state services, must be scientific from the beginning, while the needs of the future artisan require a popular kind of instruction. As the teachers are almost forced to apply themselves chiefly to the former department, in order to prepare for the examinations, the latter can not show the progress expected of it. The course is much too rapid for this; studies of the most various character are crowded together in one class, so that the pupil is overwhelmed with a mass of lessons and tasks, which even a strong mind could not master. Owing also to the haste with which the course proceeds to technical studies, one very important subject, instruction in German, has been placed in a very subordinate place, when it deserves a very high one; because there is nothing so unfavorable to the general education and progress on all subjects as a want of mastery of the mother-tongue. That many improvements are needed in this study, as well as in other real branches, is apparent from a glance at the very various text-books which are employed. Lastly, the system of teachers for each study, which

can not be found fault with in the higher classes, is not calculated to improve either the general results of the teaching nor the discipline in the lower classes, where the pupils need more detailed and constant guidance. These faults in the course of study are, however, not perceptible every where in the same manner; for some institutions are remarkable for the capacity of their teachers, and can, moreover, be strict in receiving and promoting scholars, while others are obliged, by local circumstances, to be indulgent. Thus the results of examinations vary, according to localities, and even according to the season of the year.

As many principles of the ordinance of 1836 had been altered or dropped tacitly, or other ordinances and new subjects of instruction had been introduced, the ministry of state issued to the rectors, August 14, 1882, an outline for the reorganization of the technical institutions. A new plan was drawn up with reference to the opinions and wishes expressed relative to this; and, in January, 1887, the chambers of the circles, of trade and of industry, in February a conference of rectors and other professional educators, was called in Munich, to consult on the subject. According to this new plan, which has not every where been received with the utmost approbation, the uniformity hitherto sought for among all the technical institutions has been given up, and real institutions have been erected or modified with reference to general or local requirements. Under this ordinance are to be erected 1. Industrial schools proper, with from two to four courses, for boys intending to devote themselves to industrial pursuits—these will give popular practical instruction in real studies, (German, French, history, and geography,) the elements of the mathematics, and natural science and drawing; 2. Real gymnasias, on a footing like that of the Latin schools, to give scientific instruction in mathematics, physics, chemistry, and modern languages, for rudimentary preparation for entering the public service in the departments of forests, salt-works, building, and post-office; 3. Polytechnic schools, to follow the real gymnasium or industrial school of four classes—with a general course in mathematical and natural scientific studies, and with special courses for architecture, mechanics, chemistry, and the higher part of drawing. Much stress is laid upon the professional preparation of the teacher, and the scientific course in the gymnasium and university is indicated to them. The system of teachers for each study is modified by the appointment of an *ordinarius* for each class, who has charge of the general management of the course in it.

IV. THE RESCUE INSTITUTIONS IN SAVARIA.

These are, so far as they themselves choose, under the protection of St. John's Society, which was founded, December 25, 1858, by King Max II., for voluntary aid to the poor, with the purpose of concentrated operations of all benevolent efforts and institutions. This body includes seven hundred and fifty societies and 114,643 members, and controls a property of 1,215,050 florins, profitable and not profitable, and an income, fixed and fluctuating, of 758,109 florins. The rescue educational institutions for youth train them from the first to the thirteenth year;

from the first to the second, in "cradle institutions;" from the third to the sixth, in infant asylums, (*Kleinkinderbewahranstalten*;) from the sixth to the thirteenth, in rescue houses. The cradle institutions at Munich and Fürth receive children born in wedlock, and give them lodging and care to the age of two years. There were, in 1851-2, ninety-one infant asylums, with ninety-six female teachers and 6,796 pupils; with an income of 51,753 florins. In 1883-4, there were only eight institutions, with seventeen teachers and 515 children. They are chiefly in the cities; as they can succeed in the country only where noble proprietors, and especially rich manufacturers, support them. They are under the supervision of the same authorities as the schools. The first general regulations respecting them date from the year 1889, and direct the exclusion of all instruction similar to that of the schools, anticipating them and therefore too early for the children. The institutions might contain children of both confessions, but Catholic children were to learn Catholic prayers, and Protestants, Protestant ones, from the same person; a difficult task. The rescue houses receive the children from the asylums. We are informed of eight of these (one Protestant) in Upper Bavaria, one in Lower Bavaria, six (two Protestant) in the Palatinate, two in the Upper Palatinate, six (five Protestant) in Upper Franconia, seven (five Protestant and one of both confessions) in Middle Franconia, four (two Protestant) in Lower Franconia, and seven (three Protestant) in Suabia. The oldest of the Protestant institutions is the Nuremberg Rescue House, founded in 1824, by Dr. Dittmar and Prof. Karl von Raumer, and supported chiefly by market-inspector Platner. Almost at the same time, the late Prof. Kraft established a rescue institution for girls at Erlangen, now that at Puckenhof. Most of these institutions aim to fit their pupils for service, and instruct them chiefly in domestic, field, and garden labors, and in winding, knitting, and sewing; also in plaiting straw, &c. The cost of maintaining one child is from forty to sixty florins. These institutions, as elsewhere, are assisted by voluntary gifts, by aid from the St. John's Society, (amounting, for 1855-6, in all to 4,600 florins,) and by contributions from the circle funds, to encourage private efforts. The schools of the rescue institutions, where the children are not sent to the school of the place, are subject to a visitation; which, however, does not deal with their interior organization. In the years 1853-54-55, a large number of these institutions sprang up, certainly not without the aid of the St. John's Society. The "*Puckenhof Gazette*" (*Puckenhofers Blätter*;) may be considered the central organ of the evangelical rescue institutions, and of the voluntary efforts for aiding the poor. The volume for 1856 in particular gives very full accounts of the rescue institutions. Of late years conferences have been held at Bamberg, relative to their progress, at which the inspectors and fathers of families were present. There is at Munich a state institution for children entirely crippled, which contained, in 1852, fifteen pupils, in two classes, with three teachers. Its income was 5,321 florins, thirty-two kreutzers. There are institutions for the deaf and dumb in each circle; viz., the Royal Central Deaf and Dumb Institution at Munich, and circle institutions at Strau-

bing, Frankenthal, Ratisbon, Bayreuth, Bamberg, Würzburg, Augsburg, and Dillingen; nine institutions, with twenty-one teachers, nineteen assistants, two hundred and twenty-six pupils, and an income of 88,424 florins, from foundations, parishes, the state, and private sources. Provision is made, at the teachers' seminaries for learning, to instruct the deaf and dumb. There is one city institution at Nuremberg, with an endowment of 17,870 florins. Graser's method of instruction is most used. At the central institution at Munich, pupils are received who are not deficient in mind, and who are between seven and twelve years of age. Boarding-pupils, at the first table, pay one hundred and fifty florins a year; those at the second, one hundred and twenty-five florins. The course is six years long. Of the fifty pupils, thirty-seven are received free of expense. The Royal Institution for Educating and Employing the Blind, at Munich, is remarkably prosperous; having seven teachers, twelve assistants, sixty-six pupils, and an income of 14,784 florins. Of all the pupils only three pay, and those partly; all the rest are maintained free. There are other institutions at Würzburg and Nuremberg. The pupils are taught the studies of the common schools, and female employments, such as netting, knitting, and straw and willow braiding. There are in Bavaria four hundred blind children of school age. Poor orphans are in charge of the council for assisting the poor; and the parishes are held to provide for their education and prosperity. The orphan institutions in the former principalities of Bayreuth and Ansbach at present only provide situations for children eight years of age and not yet fourteen, who are quite destitute, and have no relations bound and able to support them. It is the duty of the council for assisting the poor to procure such situations. The orphans are to be placed in respectable families, at the expense of their parishes or institutions. They are also assisted by an annual church-collection within those principalities. Orphan houses, on private foundations, in single cities or parishes, continue to exist in the older imperial cities, as Augsburg, Nuremberg, and Nordlingen; and there are city orphan houses in about thirty-two cities. One of the oldest of them is the so-called Orphan School or Foundling School, at Nuremberg, mentioned as early as the year 1365; for which, at a later period, the bookseller, Dr. F. Campe, labored efficiently. The General Pastors' Orphan House, at Windsbach, which has existed and prospered since 1837, deserves special notice. The founder of this institution, Ch. Ph. Brandt, who died January 9, 1857, commenced it in faith, with a capital of thirty-five kreutzers. It now shelters about sixty pupils, who pursue the studies of a Latin school, under five teachers. For pastors' children, not orphans, board is one hundred florins a year; for sons of laymen, one hundred and fifty florins. The official rather than paternal character of the management of the orphans has circumscribed the usefulness of these institutions in many places, and caused a division into families to be looked on as more desirable. A material advance in the excellence of all the institutions for the unfortunate and neglected in Bavaria is now in contemplation.

I. EDUCATIONAL AND OTHER BENEFACTIONS IN BOSTON, MASS.

The earliest instance of an educational benefaction, of which we have any knowledge, in New England* is recorded in the first volume of the Town Records of Boston—on “The 22d of the sixth month—August 1636.”

At a general meeting of the richer inhabitants, there was given toward the maintenance of a free schoolmaster for the youth with us—Mr. Daniel Maud being now also chosen thereunto.

The Gov., Henry Vane, Esq.,	£10	Raphe Hudson,	10s.
The Dep'ty-Gov., J. Winthrop Esq.,	£10	William Peirce,	20s.
Richard Bellingham,	£10	John Audley,	4s.
William Coddington,	30s.	John Button,	6s.
Winthrop, Jr.,	20s.	Edward Randall,	5s.
William Hutchinson,	20s.	Isaack Grasse,	5s.
Robert Keayne,	20s.	Zacke Bosworth,	4s.
Thomas Olyvar,	10s.	William Salter,	4s.
Thomas Leveritt,	10s.	James Pennymann,	5s.
William Coulbourne,	8s.	John Pemberton,	3s.
John Coggeshall,	13s. 4d.	John Biggs,	4s.
John Coggan,	20s.	Samuel Wilkes,	10s.
Robert Harding,	13s. 4d.	Cotton,	
John Newgate,	10s.	Wilson,	20s.
Richard Tuttle,	10s.	Richard Wright,	6s. 8d.
William Aspinwall,	8s.	Thomas Marshall,	6s. 8d.
John Sampford,	8s.	William Talmage,	4s.
Samuel Cole,	10s.	Richard Gridley,	4s.
William Balstone,	6s. 8d.	Thomas Savidge,	5s.
William Brenton,		Edward Ransford,	5s.
James Penne,	6s. 8d.	Edward Hutchinson,	4s.
Jacob Ellyott,	6s. 8d.	William Hudson,	
Nicholis Willys,			

The *free schoole*, toward which the “richer inhabitants” of Boston made these several subscriptions, and of which “Mr. Daniel Maud” was chosen master, was probably a higher grade of school than that for which the town, in April, 1635, entreated “brother Philemon Piermont to become scholemaster for the teaching and nourtering of children.” Toward this *free schoole* [endowed grammar school, as we suppose it to be, like the Free School of Roxbury, referred to by Gov. Winthrop in his Journal, under date of 1645, “for the education of their children in Literature to fit them for publicke service, both in Church and Commonwealth”] the town in 1641 ordered that “Deare

* The earliest instance of individual or associated contributions in this country for an educational object, which we have met with, was in Virginia, in 1621, when Rev. Mr. Copland, chaplain of the ship *Royal James*, on her arrival from the East Indies, prevailed on the ship's company to subscribe £100 toward a “free schoole,” which was afterward located in Charles City, and toward which the Virginia Company donated one thousand acres of land.

† We are indebted, for the transcript from the Town Records of Boston, to Hon. John D. Philbrick, Superintendent of Public Schools, who is now engaged in preparing a “*History of Public Instruction*” in that city.

Island should be improved," and also that the legacy by "Mis Hudson deceased" should be let for the same purpose.

We do not propose at this time, even if we had the material, which we have not, to make up the record of the town and city of Boston in respect to its public or private charities; but to transfer to our pages, for future reference, the statistics of an article which was published in the *North American Review* for July, 1845, and to add brief memoirs of Peter Faneuil and Samuel Appleton—of one whose liberal donation, for the building of the Hall which bears his name, helped to make giving a habit among Boston merchants, and of another whose manner of giving illustrates the strength of that habit which provides wisely for continued benevolence when the hand is cold in death.

EXTRACTS FROM AN ARTICLE ON PUBLIC AND PRIVATE CHARITIES IN BOSTON,
REPRINTED IN PAMPHLET, 1845.

In September, 1830, at the celebration which took place, under the direction of the city authorities, of the two hundredth anniversary of the settlement of Boston, President Quincy delivered an address which was replete with interesting comments on the history and character of the city. In a note to the oration, which was published, he inserted a list of societies and institutions for various purposes of charity, education, and religious and moral instruction, to which the benevolence of Bostonians had been directed within the then last thirty years. The amount of money shown by this catalogue to have been given away, in a town which numbered from twenty-five thousand inhabitants, in 1800, to sixty thousand, in 1830, excited some surprise, and was very gratifying to those who, from birth, personal relations, or other circumstances, took an interest in the character and reputation of the city.

In the short term of fifteen years which have elapsed since 1830, the population has nearly doubled its amount at that time; and it has become a question of deep interest to many, how far, and in what particular ways, the character of Boston has been or is to be affected by such a sudden development of its resources, and such an immense accession to its physical and commercial strength. * * *

In order to present a complete view of the subject, the note, already referred to, in President Quincy's address, is here reprinted, and then follows a list of such contributions as have been obtained since 1830, together with some items which were omitted at that time. Many of the institutions now enumerated have sprung into existence since that period; and, although so many have been found, it is probable there are others which have not been thought of, or are not known. Indeed, this enumeration must be regarded only in the light of a contribution toward the history of the charities of the city, to be hereafter perfected by some one who may feel interest enough in the subject to undertake a pretty difficult task.

President Quincy's list is as follows:—

Amounts received from the liberality of the citizens of Boston toward objects of a public nature, of a moral, religious, or literary character, chiefly within the last thirty years.

I. By the following Societies:—

Boston Athenæum.....	\$75,000
Humanæ Society.....	20,791
Boston Dispensary for the Medical Relief of the Poor.....	19,000
Massachusetts General Hospital.....	354,400
Massachusetts Charitable Society.....	16,714
Boston Penitent Female Refuge Society.....	15,172
Boston Fragment Society.....	15,205
Boston Mechanics' Institution.....	6,119
Boston Eye and Ear Infirmary.....	5,500
Boston Female Asylum.....	79,582

\$607,483

Amount brought forward.....	\$607,483
Boston Society for the Diffusion of Useful Knowledge.....	1,035
Boston Society for the Religious and Moral Instruction of the Poor	23,500
Charitable Mechanic Association	15,000
Boston Asylum for Indigent Boys	20,000
Fatherless and Widows' Society	6,320
Howard Benevolent Society	16,900
Charitable Fund, placed under the control of the Overseers of the Poor, and derived from Private Benevolence	95,000
Massachusetts Congregational Charitable Society	51,000
Seamen's Friend Society.....	3,000
American Education Society	32,228
Bible Society	40,000
Harvard College and the several Institutions embraced within or connected with that Seminary.....	222,696
Theological Institution at Andover.....	21,824
	\$1,155,986
II. Various contributions for the relief of sufferers by fire in	
Boston	\$34,528
Newburyport	16,500
St. Johns.....	8,666
Augusta	2,264
Wiscasset	5,504
	\$67,462
III. Moneys raised, within the time specified, by various contribution, or by donations of individuals, either from motives of charity, or for the patronizing of distinguished merit, or for the relief of men eminent for their public services—the evidences of which have been examined for this purpose—(testamentary bequests not being included.)	108,400
IV. Amount collected for objects of general charity, or for the promotion of literary, moral, or religious purposes, by, or under the influence of, various religious societies in the metropolis, (not including the particular annual objects of expenditure of each society,) communicated by the several officers of those societies, or by individuals having access to their records, or to the papers containing evidence of such collections.	469,425

Total **\$1,801,273**

In the following list, those which were included in the former one are distinguished by Italics, while those which were omitted, though existing in 1830, and those which have since begun their career, are in Roman letters. Where the date of the donation was previous to 1830 it is intended to be indicated, and the correction of any mistakes, either in dates or amounts, will be gratefully acknowledged. In some cases, nothing was practicable but an estimate of the probable amount. These are mentioned in the catalogue, and the authority is given.

Donations to Institutions for Theological Education and other Objects of a Religious Character.

American Board of Commissioners for Foreign Missions, since 1810	\$278,166 89
" <i>Education Society</i>	81,160 00
" Tract Society, since 1830*	25,420 39
" Unitarian Association	22,233 04
Massachusetts Missionary Society,	40,000 00
" Evangelical Missionary Society, since 1820....	7,769 57
" Society for Promoting Christian Knowledge ...	7,900 00

\$462,649 89

* About \$10,000 more from 1815 to 1830, according to the estimate of the treasurer.

Amount brought forward,.....	\$462,649 89
<i>Bible Society</i>	11,706 00
Benevolent Fraternity of Churches.....	46,014 01
<i>Theological Institution at Cambridge</i>	29,500 00
Society for Promoting Christian Knowledge, Piety, and Charity.....	1,800 00
Pitts Street Chapel, including Cost of Land.....	16,366 22
Suffolk Street Chapel, exclusive of Land.....	16,052 08
Unitarian Association for Domestic Missions, within the last two years.....	9,330 76
<i>Boston Society for the Religious and Moral Instruction of the Poor</i>	17,829 82
City Mission, a new organization of the last named society, since 1840.....	13,573 47
Foreign Evangelical Society.....	8,162 33
Warren Street Chapel.....	48,000 00
Pine Street Church, to relieve it from debt.....	10,000 00
City Missionary (a private agent).....	2,605 64
Protestant Episcopal City Mission, including donation for chapel.....	35,900 00
Theological Institution at Newton.....	28,333 00
Bangor Theological Seminary.....	2,000 00
Waterville College, Maine.....	5,500 00
Free Presbyterian Church of Scotland.....	2,126 14
Protestant Episcopal Foreign Mission.....	12,190 69
Protestant Episcopal Domestic Mission.....	7,770 37
Baptist Foreign Mission, within twenty years.....	60,000 00
Baptist Domestic Mission, do.....	30,000 00
For erection of Churches in various parts of the United States, within twenty years.....	20,000 00
For education in the ministry, exclusive of Baptist Seminary at Newton, within twenty years.....	40,000 00
	<hr/>
	\$938,410 42
<i>Donations to Institutions for Purposes of Instruction.</i>	
Lowell Institute.....	\$245,000 00
<i>Harvard College</i>	83,755 67
Washington College, Hartford, Ct.....	2,350 00
Amherst College*.....	36,104 00
Williams.....	25,183 00
Yale " since 1825.....	27,220 00
Bowdoin " since its foundation†.....	64,909 19
Brown University, Providence.....	4,629 00
Illinois College.....	11,000 00
Shurtleff College, Illinois.....	10,300 00
Marietta College, Ohio (estimate by president).....	4,000 00
Oberlin Collegiate Institute, Ohio.....	1,725 14
Perkins Institution for the Blind.....	82,500 00
Hartford Asylum for the Deaf and Dumb, in 1816-17....	4,950 00
Boston Society of Natural History.....	36,378 50
<i>Boston Athenæum</i> , subscription to new shares \$70,800, of which one-third may be considered as a donation.....	23,600 00
<i>Charitable Mechanic Association</i>	40,000 00
Mercantile Library Association.....	3,100 00
Mechanic Apprentices' Library Association.....	1,800 00
	<hr/>
	\$708,504 50

* A subscription was made for the purpose of erecting buildings, and another for a fund of \$30,000, for Amherst College, at an early period of its history, toward both of which the treasurer thinks Boston probably contributed; but, not having documents to show the amount, the above sum is exclusive of any thing given for those purposes.

† Of the amount received by Bowdoin College, \$33,461 69 were paid by the heirs of Governor Bowdoin, for a release of the claims of the College to certain lands inherited from him; \$3,248 00 were from sundry citizens of Boston; and the remainder, \$28,069 41, from Governor Bowdoin, or his family.

Amount brought forward,.....	\$708,504 50
Massachusetts Agricultural Society.....	7,239 66
Normal Schools*	10,000 00
Medals for the High School for Boys*.....	2,000 00
Groton Academy*	10,000 00
Lane Seminary, Cincinnati, Ohio (estimate).....	25,000 00
Horticultural Society.....	11,000 00
Latin School Association	2,000 00

\$775,744 16

Donations to Institutions for Charitable Purposes.

<i>Mass. General Hospital and McLean Asylum</i>	\$286,512 93
<i>Mass. Eye and Ear Infirmary</i>	39,958 48
<i>Mass. Congregational Charitable Society</i>	1,783 00
<i>Boston Asylum for Indigent Boys and Farm School</i>	61,090 82
" <i>Female Orphan Asylum</i>	40,439 99
" <i>Seamen's Friend Society</i> (estimate by treasurer)	45,238 16
" <i>Penitent Female Refuge Society</i>	21,636 23
" <i>Fragment Society</i>	6,690 94
" <i>Dispensary</i>	20,155 00
<i>Howard Benevolent Society</i>	43,000 00
<i>Fatherless and Widows' Society</i>	19,654 00
<i>Overseers of the Poor</i> , (corporate fund)	1,000 00
<i>Boston Lying-in Hospital</i>	27,871 00
" <i>Seamen's Aid Society</i>	15,667 98
" <i>Port Society</i>	20,729 00
" <i>Employment Society</i>	1,633 00
" <i>Society for Employment of Female Poor</i>	6,048 28
" <i>Orthopedic Institution</i>	1,400 00
" <i>Episcopal Charitable Society</i> †	40,329 53
<i>Charitable Association of Boston Fire Department</i>	16,016 87
<i>Prison Discipline Society</i>	30,494 71
<i>Widows' Society</i>	17,634 77
<i>Society for the Prevention of Pauperism</i>	6,288 35
<i>Annuities and Donations to Individuals, in sums varying</i> <i>from \$500 to \$12,000</i>	66,130 62
<i>Quarterly Charity Lecture at the Old South, amount</i> <i>given by individuals for permanent funds</i>	18,600 00
<i>Amount collected at the quarterly contributions since 1822</i>	5,000 00

\$861,003 66

Miscellaneous.

<i>Bunker Hill Monument</i>	\$100,000 00
<i>Temperance Cause</i> (estimate by its friends).....	100,000 00
<i>Abolition of Slavery</i>	57,000 00
	<hr/>
	\$257,000 00
<i>Colonization</i> (estimated)	1,300 00
<i>Peace Society, from 1816 to present time</i>	7,371 38
<i>Public Garden</i>	20,000 00
<i>Boston Academy of Music</i> (for alteration of Odeon).....	5,038 00
<i>Society for Diffusing Information among Emigrants</i> (extinct)	919 25
<i>Subscription for the Relief of Suffering at Rockport</i>	2,075 91
" <i>for the Relief of Suffering at Cape Cod</i>	4,794 35
<i>Fire at Charleston, S. C.</i>	5,000 00
" <i>Mobile</i>	4,098 02
" <i>Fall River</i>	14,044 58

\$321,641 49

* By an individual.

† This society was established in 1794; but the greater part of its funds have been contributed within the present century.

Amount brought forward,.....	\$321,641 49
Fire at Hamburg (Germany).....	900 00
“ Pittsburg	15,000 00
“ Roxbury.....	1,000 00
“ Church Street.....	2,859 33
Statue of Washington	7,276 17
Monument to Franklin	940 00
“ John Harvard.....	433 75
“ Hannah Adams.....	300 00
“ J. S. Buckminster	500 00
“ Dr. Murray.....	300 00
“ Dr. Tuckerman, about.....	1,000 00
“ Dr. Spurzheim	1,076 00
“ Dr. Kirkland, about.....	1,000 00
“ Dr. Bowditch, about.....	4,000 00
“ Dr. Channing	1,800 00
Bust of Dr. Freeman, in King's Chapel.....	486 00
Bust of Dr. Greenwood, in King's Chapel.....	410 00
Fence, Trees, &c., for Granary Burial-Ground	2,936 65
Total	\$2,938,021 63

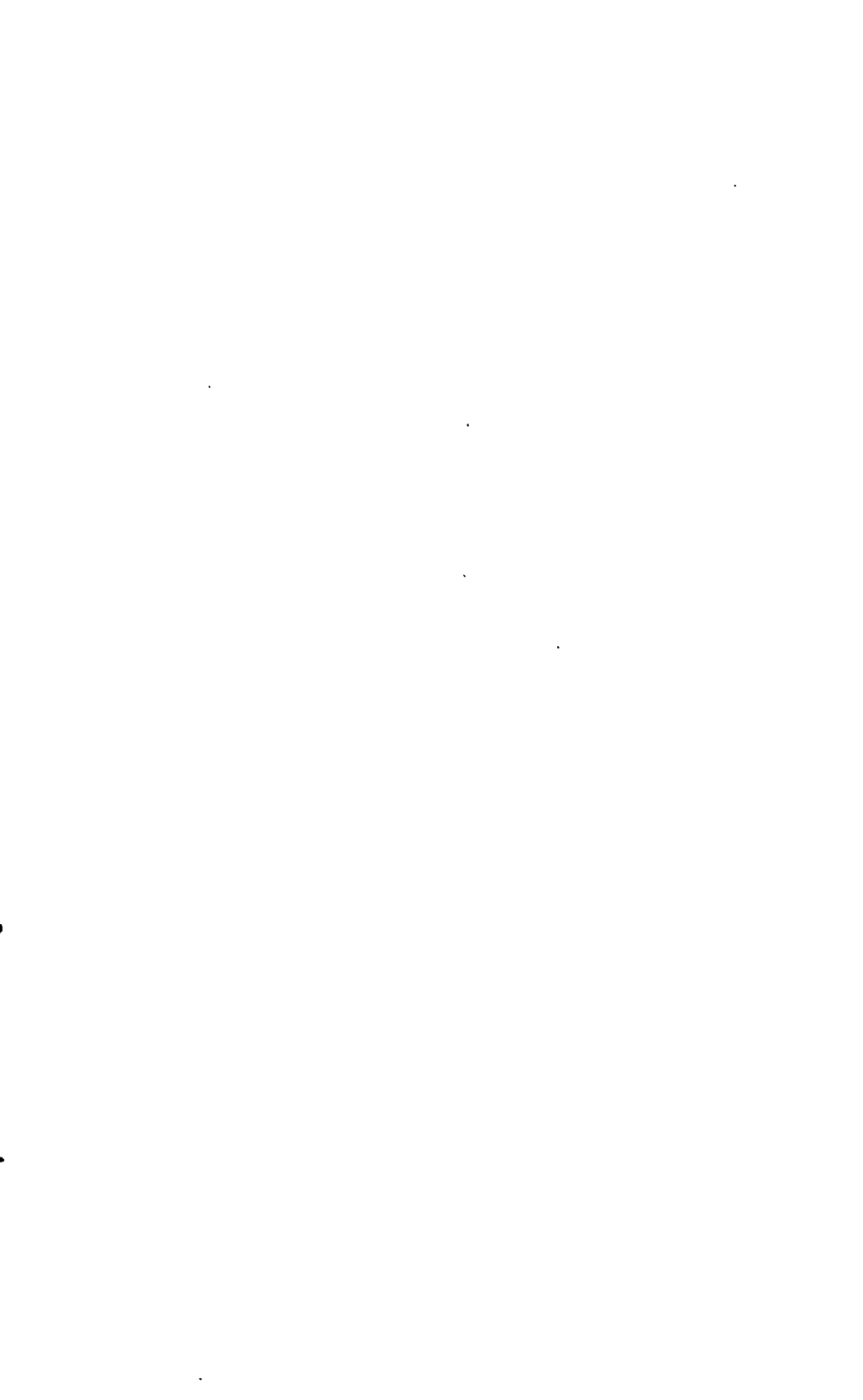
Besides those above enumerated, application has been made to the officers of several other institutions and societies known or believed to have received aid from Boston; but, from some cause, the information has not been received in an authentic shape, and all mention of it is therefore omitted.* * *

As long as there are differences in the tastes and powers of men, there will be great differences in the modes in which they will dispense, as well as in those by which they acquire, abundance; and while one will encourage only institutions for the relief of physical wants, another will give no support to any thing but promoting the progress of Christianity, and a third esteems nothing of so much importance as the cause of education. We should learn to think respectfully of every form in which charity displays itself, and not allow ourselves to say, “How useless is this or that object! what a waste of means upon an unattainable end!” We can not know enough of the operation of causes to justify the cavil; and there is one branch of utility, in every mode of giving, which is often overlooked; and that is the utility to him who gives. It is comparatively of little consequence to what a man gives. The choice is merely an exercise of his understanding. But it is of great consequence that he should give to something; and the greater the diversity of objects for which he can feel a sympathizing interest, the greater is his sphere of usefulness to himself as well as others, the more he is enlarging both his mind and his heart, and the more does he deserve the appellation of a liberal-minded man. At the same time, it can not be denied, that the mode in which a man should attempt to benefit others ought to be a matter of careful attention and study. It should not be left to the hazard of impulse and accidental predilection, but should be made the subject of reflection, and investigation into the actual wants of society. It is very easy to give money in such a manner that it shall not only be comparatively useless, but shall be even a burden and a tax; and the greatest sagacity will not prevent such results, if the ambition to leave a long-enduring impression on society should exceed the ability to produce it. The best guide to the true course in such cases is undoubtedly experience; and although new provisions must, of course, be made for new circumstances as they arise, yet there can be no great fear of going wrong when we make arrangements for the occurrence of events which have happened so often already that the probability of their occurrence in future amounts almost to certainty.

There is one error so frequently repeated, notwithstanding the perpetually-recurring proofs of its being a great mistake, that it will not be superfluous to utter a caution against it. It is limiting and restricting the uses to which funds may be applied, to such a degree that, when the circumstances of society change, even but slightly, the means provided for a previous state of things are no longer applicable to the corresponding wants of the present and succeeding times.

* From the Methodist communion and the Catholics no returns have been obtained. Several literary and theological institutions in the West, besides those mentioned in the list, are believed to have received assistance from Boston; but the amount has not been ascertained.

The only way in which a man can do permanent good with the money which he must leave behind him is to trust something to the discretion of those who will follow him. Let him describe his wish and his design in so general a way, that, while it may be clearly understood, it shall not be confined within such straight lines, that it can incline neither to the right hand nor to the left. Circumstances do not move so; and if a man's will cannot be bent to accommodate it to them, it must be broken.





W. H. Wells.

One year in school 1830-1831

X. WILLIAM HARVEY WELLS.

BY CHARLES NORTEND,

Editor of the Connecticut Common School Journal.

WILLIAM HARVEY WELLS was born in Tolland, Connecticut, Feb., 27th, 1812. His father was a farmer in moderate circumstances, and the son lived at home, working most of the time on the farm, and attending a small district school for a few weeks each winter till the age of seventeen years. An incident that occurred during this period is deserving of notice, as having had an important influence in forming his character. He had undertaken to master the last half of Daboll's "*Arithmetic*," and advanced as far as Cube Root, without assistance from his instructor. But here he met with obstacles which seemed to him insurmountable, and after a day's trial he told his father he should be obliged to call on his teacher for help. The father had watched with interest the successive steps of his progress, and now advised him to remain at home a day, and see if he could not overcome the difficulty. The day passed, but no light dawned upon the mysteries of this cabalistic rule, and he gave it up in despair. Again his father encouraged him to persevere, and recommended that he should remain at home another day. The second day passed with no better success than the first; but his father still urged him to rely upon his own resources, and assured him that he had strength enough to master the rule alone, if he would only call it into exercise. The labors of the third day were crowned with success; but the triumph he had gained over the unexplained difficulties of a formal rule in Arithmetic, was of little moment compared with the new views he had acquired of the power of determined and persevering effort.

He now manifested an irrepressible desire for improvement, and often entreated his father to allow him the privilege of attending an academy. He had already commenced the practice of keeping a diary, and for a period of nearly twelve years he did not omit, for a single day, to make entries.

His ardent desire to enjoy higher and better advantages was at length gratified; and though he was obliged to labor daily with his

hands to meet the expense of his board, his tasks, both in school and out of it, were performed with a light heart, and life opened bright before him.

The fall and winter of 1829-30, were spent at an academy in Vernon, Conn., under the charge of Theodore L. Wright, A. M., afterward the distinguished principal of the Hartford Grammar School. It was here, at the age of seventeen, that he was introduced for the first time to the study of English Grammar. But here we prefer to let his teacher speak for him: "Early in the term," says Mr. Wright, "I noticed, with daily increasing interest, peculiar characteristics and developments in young Wells. It was soon manifest that he had entered the school with a determined purpose of making the most of his time and opportunities. His ear was ever open to the requirements of his teacher, to which he made it a point of honor and conscience strictly to conform, and that, too, irrespective of the sentiments or practices of his fellow pupils. His lessons were studied in the most careful and thorough manner, and no subject or recitation satisfied him over which there rested a shadow of obscurity. Fresh in my recollection as if it were but yesterday, is that *earnest*, honest, persevering expression of countenance, habitual from day to day, and kindled with a glow of enthusiastic delight, as often as a new truth in literature or science was brought to his clear comprehension.

"After two terms at the academy, he left, and, for a short time, engaged in teaching a district school.* I was soon called to a new position at East Hartford, in an English and classical school, and, such were the favorable impressions made on my mind by young Wells, that I broached to him the suggestion that he should commence a course of study preparatory for college."

Mr. Wells, in accordance with the suggestion of Mr. Wright, commenced a course of study with the design of entering college. By his own efforts he defrayed the expenses of board and tuition, and with all the ardor of his nervous temperament applied himself to study. But the undertaking was too severe for him, and at length his eyes became so seriously affected that he was obliged to abandon his favorite project, just as his preparatory course was nearly completed.† He was afterward employed a part of the time in assisting Mr. Wright. "In this situation," says Mr. W., "he early exhibited that peculiar tact for teaching which has since more manifestly proved

* The following winter was spent at an Academy in his native town; and during the winter of 1831-2, he taught a district school in Vernon, at ten dollars a month, and "boarded around."

† Being for a time unable to make any use of books, and undecided as to his future course, he devoted a few weeks to the construction of an electrical machine of considerable power, with which he amused himself and his friends, and somewhat astonished not only the children of the neighborhood, but many of the lower order of animals.

that his profession for life was wisely chosen. He continued his efforts as assistant for two years, and during this time he inspired in my mind a confident anticipation of his eminent success as an educator of youth. He at this time determined to make teaching his profession, and, at my suggestion, went to the Teachers' Seminary, at Andover, Mass., in order better to qualify himself for his chosen vocation. The advantages of this school proved highly serviceable to him, and after remaining at Andover a few months he returned to assist me.* During the last year of my teaching in East Hartford, the English department of the school was mainly under the instruction of Mr. Wells, and was remarkably prosperous. As an evidence of his success and popularity at this time, it may be stated that forty pupils attended the school from the city of Hartford, nearly all of whom walked from the city, daily, a distance of two miles or more. When I left, for a voyage to Europe, I recommended Mr. Wells as my successor. He was retained on terms very advantageous to himself, and his services were held in the highest esteem by the patrons of the school.

"From my earliest acquaintance with the subject of this sketch, his indefatigable industry has ever been a marked feature in his character. *Work* of some kind has seemed to be his natural element. Out of this, he was unsatisfied and restless. When his eyes would not endure reading and study, he was even the more earnest in acquiring knowledge from books through the eyes of others, employed to read for him. In this way, for several years, he made most of those acquisitions which he afterward reduced to practical use, both in teaching and in preparing his publications. Though compelled to dependence in this respect, he was remarkably independent and self-reliant in his processes of thought and solution of difficult questions and problems.

"In his pocket memorandum new and striking facts, as they were presented, were carefully noted: also all words of doubtful import or uncertain pronunciation, as he heard them, were recorded for future examination, provided a dictionary was not at hand. His diary was his *vade mecum* wherever he went, whether to hear a lecture or a sermon, to visit a friend, or to take one of his driving walks for exercise, thus garnering treasures from every source. The storehouse of his mind thus replenished, furnished delightful entertainment to his pupils at recitation.

* During his connection with the Teachers' Seminary at Andover, he became much interested in the study of geology and mineralogy. In company with the teachers and other members of the school, he made frequent geological excursions, and collected a cabinet of several hundred specimens. But the subject which chiefly engrossed his attention, was that to which his life has since been devoted—the theory and practice of teaching.

"I have always regarded the eminent success of Mr. Wells as a teacher, mainly owing to his enthusiastic interest in the subject taught, and also in the pupils whom he taught; his zeal and energy, the meantime, all under the guidance of good sense and discretion, while deeply penetrated himself by a consciousness of his own personal responsibility."

A circumstance that occurred in his early history as a teacher, is worthy of mention, as illustrating a predominant trait of his character.

Among the classes which he was called to instruct, was one in Algebra, composed mostly of older pupils. Though he had previously studied the text-book, there were several problems in it which he had never been able to solve. There was one in particular on which he had already tried his strength several times without success. His class was now rapidly approaching this problem, and he felt the necessity of being prepared for any emergency. He therefore set himself at work in earnest and devoted several hours to the unsolved problem;—but still the desired result seemed as far from his grasp as ever. Mortifying as the alternative was, he decided at length to go to one of the teachers of the school and ask for assistance. This individual kindly engaged to examine the question but remarked that as it had been some time since he reviewed that portion of the book, the mode of solution might not readily occur to him. The class had already reached the section in which the difficulty occurred, and there was no time to be lost. After one or two days, the problem was returned to him without a solution. What could be done? To go before his class and acknowledge that he was unable to master it, would be to lose caste at once. The necessity of the case suggested one more expedient. He had a friend in an adjoining city who was quite distinguished as a mathematical teacher. To the house of this friend he resolved to direct his steps; but on arriving, he learned to his utter confusion, that his friend had left home and would not return for several days. His last hope had fled. With a burden of chagrin and mortification that was almost insupportable, he commenced retracing his steps. "What," thought he, "does all this mean?" After walking a few moments in silent meditation, his emotions found audible utterance. "I *can* solve the problem," he said, with emphatic gesture, "and I *will* solve it." He went to his room, and seating himself at his table, he did not rise till the task was accomplished. He has often alluded to this single triumph as of more real value to him than a year of ordinary study. It caused him to know his own strength, and taught him to think, and to depend upon his own resources.

It has been previously stated that Mr. Wells had for a time con-

nected himself with the flourishing Teachers' Seminary at Andover, then under the charge of Rev. S. R. Hall, the well-known author of the volume of "*Lectures on School Keeping*." During the eight months that he passed here, he gained the confidence and respect of the principal to such a degree that he was, in less than two years after leaving, invited to return and assist Mr. Hall in the instruction of this seminary. This was a field congenial to his tastes, and here he continued to labor through the various fortunes of the seminary for a period of eleven years, from 1836 to 1847, his attention, for most of this time being divided between the general department of the school, and the special or teacher's department.

Though still afflicted with weak eyes, he here planned and executed an extended course of English reading. For several years he employed one of the students to read for him evenings, and his reading was always accompanied with the use of either pen or pencil. On one occasion he entered into a reading partnership with a student in the Theological Seminary, and during the evenings of a single term they read together the whole of Shakspeare's dramas, besides several volumes on mental and moral science, often carrying their reading and discussions into the morning hours.

While connected with this seminary he was accustomed to discuss before his teachers' classes, from year to year, the principles of Grammar in connection with a careful analysis of Milton and other poets. In his course of English reading, which was carried forward at the same time, it was his practice to mark such examples as would be most servicable in testing or illustrating these principles. Several hundred volumes of standard English literature were read in this way, during a period of about nine years, and many thousands of examples noted and classified for this purpose. The result of these investigations and comparisons was finally embodied in the "*School Grammar*," which was first published in 1846; and up to the present time, nearly three hundred thousand copies of this work have been issued.

In 1845, the honorary degree of Master of Arts was conferred on Mr. Wells by the Trustees of Dartmouth College. Few men have proved more worthy of such a compliment.

S. H. Taylor, LL.D., the well-known and esteemed principal of Phillips Academy, Andover, thus writes:—

The first time I saw Mr. Wells to know him, was at an accidental meeting of some half dozen persons, mostly teachers, but he a pupil. The conversation turned on some point, in regard to which there was considerable difference of opinion. I was particularly struck with the confidence with which Mr. Wells advanced his views—not the confidence of one who seemed obtrusive, or out of his place, but of one who had thoroughly studied the subject and knew what he said. I then marked him for future observations.

In his subsequent connection with Phillips Academy as a teacher, there were some characteristics worthy of notice. He was thoroughly earnest; he was alive to his work, and was impelled by a strong inward impulse to do whatever would secure success in it. The clear ring of his voice as he propounded, in quick succession, questions to his class, was sufficient to indicate to those who might not see the glow upon his countenance, how strong a sympathy he had with his work. Indeed he might be said to be enthusiastic in whatever he taught, and his pupils, at once, imbibed his spirit. With such an electrical influence constantly emanating from the teacher, none of his classes ever showed the listlessness and indifference so often seen in the school-room.

He was always master of the subjects which he taught. He spared no expense or labor which might give him a more comprehensive and exact acquaintance with the various topics which came before his classes. He gathered around him books from every quarter, and studied them with unwearied patience. Sometimes his severest and most protracted labor was employed in settling what are too often considered small points, and passed over with some general remarks, or not touched at all. Such questions Mr. Wells settled, as far as they could be settled, and then discussed them with his classes, in the end giving them his own results. No teacher within my knowledge drew sharper lines here than he.

He resolutely and persistently held the pupil responsible to do for himself all he supposed to be in his power. Many a teacher has the same theory, but I have never known it so severely reduced to practice as in Mr. Wells' system of teaching. Many of his pupils have found themselves toiling over mathematical questions more than a week after they came up in course; but there was no release till the difficulty was mastered—the pupil, by this process, gaining mental strength and confidence in himself which would greatly diminish other similar difficulties.

His views of discipline were sound and judicious. He governed with ease because he never required what was unreasonable, and what he did require, his pupils well knew must be met. In the support of good order and wholesome discipline, his associate teachers always knew that they were sure of his warm cooperation. I well remember an instance, when it became necessary for the principal to discipline a number of members of the school, and when, as is not unusual in such cases, the sympathy of a portion of even the better class of the school was with those who had been disciplined, Mr. Wells took occasion to say, when all his classes were before him, that the discipline which had just been administered, was the noblest and most manly act that he had known since his connection with the school. Men of different views of the value of proper discipline, or of different character, would have saved themselves the trouble of making this remark, hoping thereby not to endanger their own popularity.

In times and circumstances like these, Mr. Wells showed an energy and decision of character, a true heroism, which evinced his real worth, and assured his associates on how strong an arm they could lean. I need only add that all Mr. Wells' relations with his associates here were of the most happy and fraternal character.

Mr. J. S. Eaton, who succeeded Mr. Wells at Andover thus writes:—

As a teacher Mr. Wells had a rare tact, or faculty, to communicate his ideas to his pupils and to awaken thought and enthusiasm in them.

At one time it was my good fortune to be a member of his classes in Grammar and Algebra, and occasionally he would take the place of another teacher in Book-Keeping, Geometry etc., and invariably, in such a case, the class was quickened and the darkness that hung about them was dispelled.

As a disciplinarian he was equally happy. I remember an instance in the Algebra class of a young man who was very talkative—excusing himself for a poor lesson in fractions because it was *Algebra* and not *Arithmetic*. "If it were *Arithmetic* he could solve the examples easily enough." Mr. Wells very promptly gave him an example in *Arithmetic* involving precisely the same principles, and again the pupil failed and attempted to excuse himself in some other way, becoming more loquacious than before, when Mr. Wells silenced him

with a playful but decisive ;—"Please allow me to talk a part of the time."¹⁰ I name this little incident as illustrative of his skill in managing a recitation and in controlling a wayward pupil.

I might say much of Mr. Wells as a man, a gentleman, a Christian—but it will be unnecessary. All who knew him will always remember his excellence in these respects.

While connected with the Andover Academy, Mr. Wells had the use of a valuable theodolite and other mathematical instruments, and gave special attention to practical surveying and some branches of civil engineering. It was his custom to spend much time in the fields with his classes, out of school hours, and make careful surveys of the different farms belonging to the institution and other portions of the town.

In the summer of 1847, Mr. Wells was elected Principal of the Putnam Free School, Newburyport, Mass. This institution was founded by the munificence of OLIVER PUTNAM, a native of Newburyport. Mr. Putnam left a certain amount to be invested until it should increase to the sum of \$50,000, and then to be appropriated to founding a "Free English School for the instruction of youth wherever they may belong." The trustees from the commencement determined that *thoroughness* should constitute an important feature of the instruction in this school—believing that it was far better to have a limited number of pupils thoroughly instructed than a larger number less carefully taught. With this view the number at first was limited to eighty.

Though Mr. Wells was elected in the summer of 1847, he was not expected to enter upon his duties in Newburyport till the spring of 1848. Soon after his election he resigned his position at Andover, in order that he might secure a few months of relaxation before entering his new field of labor. But it is no easy matter for a thoroughly live educator to cease from work—and hence Mr. Wells might be found enjoying his vacation by assisting Mr. Barnard, then superintendent of schools in Rhode Island, in conducting Teachers' Institutes. He also rendered much of the same kind of service in Massachusetts and New Hampshire. Not a few teachers, at these Institutes, received from Mr. Wells an impulse in the right direction, which they will never lose. The eyes of many were opened to behold the business of teaching in a new and more truthful light.

In April, 1848, Mr. Wells entered upon his duties at Newburyport full of hope, and during a period of six years he labored with his wonted zeal, and his efforts were crowned with abundant success. The school became one of the prominent attractions of the beautiful city in which it was located. From the outset, the "Putnam Free

¹⁰ It should be remembered that the pupils were young men—some of them as old as their instructor.

School" was an institution of rank and influence. It was well supplied with illustrative apparatus, and Mr. Wells gave an extended course of experiments every year, in chemistry and natural philosophy. These lectures and experiments were attended by a large number of citizens with manifest satisfaction and profit.

Another branch to which he gave special attention was astronomy. His instructions in this branch were always accompanied with evening observations of the heavenly bodies, and each member of the higher classes was required to present at least one original calculation of an eclipse. He procured at his own expense an achromatic telescope with an object-glass five and one-fourth inches in diameter, and a focal length of seven feet and three inches. This instrument he still retains for his private use.

L. F. Dimmick, D. D., one of the trustees of the Putnam Free School, in writing of Mr. Wells, says:—"He has a vigorous and well furnished mind. He is ardent, devoted, enthusiastic even, in his work. He has a rare faculty of inspiring his pupils with the like spirit of enterprise and love of study. His plan of instruction is comprehensive and well balanced; and he so leads his pupils through it as to call up and improve the deeper and stronger elements of their being. I consider him as holding a very high place among the distinguished educators of the time."

It was during his residence at Andover and Newburyport that the writer became intimately acquainted with Mr. Wells. From the first he felt drawn toward him and attached to him by that earnest manner and thorough devotion with which he engaged in every undertaking designed to advance the cause of popular education. He was ever ready to contribute of his time, his means, his influence, for the good of the cause. For many years he was one of the most efficient members and officers of the Essex County Teachers' Association, of which he was an honored President for two years. He was constant in his attendance upon the semi-annual meetings of this useful association, and was ever devising means to make them more interesting and useful. It was the writer's privilege frequently to meet him on committee business at these associations, and he was always decided, clear, and courteous. It was a marked trait of his character that he always knew of what he affirmed, and he so affirmed as to cause all who heard, feel that he possessed a zeal that was according to knowledge.

While president of this association, he offered prizes for essays on educational subjects, to be read at the semi-annual meetings. These premiums he paid from his own resources. It is not too much to say,

that Mr. Wells' influence will be felt for good in this association for scores of years to come—a perpetuating good.

Mr. Wells was one of the founders of the Massachusetts State Teachers' Association, of which he was president for two years. His efforts in behalf of this organization were always judicious and earnest. He was also one of the projectors and early editors of the "*Massachusetts Teacher*." Those who have lately entered the educational service can but poorly appreciate the amount of labor required, and the amount rendered by active members, a score of years ago. But Mr. Wells' entire training and mental discipline from the commencement of his course of study, tended eminently to fit him for efficient aid in the incipient stages of educational organizations and efforts.

In 1854, the Massachusetts Board of Education manifested their appreciation of Mr. Wells' worth as an educator, by placing him at the head of the Westfield State Normal School. Under his direction the school rapidly increased in numbers, and in less than two years the legislature deemed it necessary to make a special appropriation for enlarging the building.

Though Mr. Wells remained at Westfield only two years, it was sufficiently long to enable him to leave his impress upon the institution, and to secure the highest regard and confidence of the Board of Education and the friends of the school. His system of combining the practice of teaching with the study of the different branches is worthy of special notice; not because it was peculiar to this school, but because it here received more than usual attention, and because in some normal schools its importance is believed to be under-estimated, especially in the lower classes.

As soon as a pupil entered the school, he was made to feel that all his studies and recitations must bear directly upon the main object before him. However deficient a class might be found in the elementary branches, they were never required to go through a course of preparatory lessons, as such. They were, of course, required to study these elements, but to study them as teachers and not as mere scholars—knowing that their ability to teach the principles they were studying would be regarded as the most important part of the lesson—and that this ability would be sure to be tested at the recitation. He that studies a lesson for the purpose of qualifying himself to instruct others in its principles, is more likely to master the subject itself, than he who studies it merely to recite as a pupil. Viewed in this light, the defective qualifications of most of the pupils who enter our normal schools are found to be an evil of less magnitude than many have been accustomed to regard them.

Another marked feature of his course of instruction at Westfield, was the prominence given to the study of the English language and literature. This did not consist solely nor mainly in giving special attention to the principles of rhetoric and grammatical analysis, but the great productions of the language were themselves subjected to a careful and searching investigation. Classes were also formed in Latin, not for the purpose of making proficient in that language, but chiefly as a means of studying the derivation of our own tongue.

On commencing his labors at Westfield he felt the need of counsel from others engaged in the same field of labor, and wrote to several normal teachers suggesting the expediency of calling a meeting of Normal School Teachers for the purpose of mutual consultation and aid. The proposition was favorably received, and he accordingly sent letters of invitation to the principals of the different normal schools in the country to meet in convention at New York, in connection with the National Teachers' Association. A meeting was held on the 30th of August, 1856, and from this originated the present "American Normal School Association," which promises much usefulness.

In May, 1856, Mr. Wells resigned his position at Westfield with a view to accepting an appointment as Superintendent of Public Schools in Chicago, Illinois—and on the 1st of June he entered upon the discharge of his new duties. This was a highly important position and one well fitted for the full exercise of Mr. Wells' mind and energies.

One of the objects that first claimed his attention in Chicago, was the organization of the High school in a new and commodious edifice. To this Mr. Wells gave his earnest attention, and he spared no effort that might tend to make this new school a model of its kind. It was opened to pupils of both sexes on the 8th of October, 1856, and embraced in its plan three distinct departments—Classical, English High, and Normal. With a thoroughly digested plan of operation and management, this school has, from the outset, maintained a high position, and few cities can boast of better educational advantages, in the higher departments than those afforded by the Chicago High School.

As soon as the High School was in successful operation, he directed his thoughts to the lower grades of schools—and particularly to the Primary. Well understanding that the higher grades could not be truly and permanently elevated, unless the under grades were what they should be, his active and practical mind was awake to devise means for the improvement of the lower classes, in which the children receive their earliest and most lasting school impressions; and as one of the most important measures for the accomplishment of

this object, he recommended that the assistants in the primary departments should receive a rate of compensation equal to that paid to the female assistants in the grammar schools.

His annual Reports to the Chicago Board of Education are interspersed with practical and well digested views on a variety of educational topics. The following passages in relation to primary schools, are extracted from his Report for the year 1858-9:—

Our Primary Schools are the basis of our whole system. If evils are suffered to exist here, they will manifest themselves in all the higher stages of the pupil's progress, and cling to him through life.

"Scratch the green rind of a sapling, or wantonly twist it in the soil;
The scarred and crooked oak will tell of thee for centuries to come."

It is in the Primary Schools that more than half of all our public instruction is imparted, and a large portion of the children gathered here do not remain in school long enough to pass into the higher departments at all.

To excel as a primary teacher requires peculiar natural gifts, a thorough acquaintance with the first principles of knowledge, special fondness for young children, and an abiding consciousness that there is really no higher department of useful labor than that of giving direction to the first efforts of minds that are opening to an endless existence.

There is no other grade of schools in which the personal character of the teacher is so directly felt, as in the Primary. In the Grammar School, lessons are learned from text-books, and very much of the pupil's progress is made without the direct assistance of the teacher. But in the Primary Schools, the teacher is herself the text-book, the living oracle; and nearly all the impressions received by the pupil are a direct reflection from her own mind and heart.

Reading, the most important branch of school instruction, is generally the most imperfectly taught, especially in Primary Schools. Why is it, that in listening to a child who is reading the most colloquial piece that can be chosen, we find so marked a difference, in most cases, between the tones and modulations he employs and those of common conversation? The answer is a sad reflection upon the manner in which reading is generally taught in elementary schools.

That this evil is necessary, no intelligent teacher believes. If we look for the seat of the difficulty, we shall probably find one of the principal causes in the fact that most children are first taught to call the names of a large portion of the words they read, without understanding their meaning. The remedy of the evil is suggested by the cause. Let no unmeaning words be presented to the young learner, and let no word ever be read without being understood. It is not enough that the word has a meaning, and that the child is *presumed* to understand what it is; the teacher should be sure that the child actually does understand every word that is read. The first words introduced should always be the names of common and familiar objects. The objects themselves should be referred to, and if possible presented to the test of the senses. The teacher should talk with the pupils about the objects, and employ the words in simple and familiar sentences, so that the reading may be associated with common conversation, and be made as nearly like it as possible. These directions are very few and very simple, and they have been given, substantially, many times before, and yet, if they had been faithfully followed in all the elementary schools of the country, we should probably find less than half the unnatural reading which we now witness.

In respect to the manner of giving children their first lessons in reading, a considerable diversity of practice still exists. Some teachers adhere to the system of teaching the *alphabet* first, then short syllables, and then words and sentences. Others commence with the *sounds* of the letters, and then proceed to their combination in words. Others commence with *words*, and afterwards

introduce the sounds and names of the letters of which they are composed. Others teach a few letters first, by their names, and then proceed to combine these letters in simple words; thus teaching the alphabet and words simultaneously. There is however, at the present time, a very decided tendency to what is called the *word method*. Words have meaning; letters have none. Words are as easily learned as letters, and they naturally precede letters. It is to be hoped that the time is near, when the philosophy of education will be better understood, and when all teachers will learn that it is safe to follow nature in our efforts to cultivate the minds of children. Who would think of teaching a child the different parts of which a tree is composed, before he has learned to distinguish the tree itself? A child does not learn to call the name of a house by studying the windows, doors, chimneys, roof, etc., but he first learns to recognize the house as a whole, and the parts that compose it are learned afterwards. So in reading, the natural order is to learn the whole word first, and and afterwards to learn the names and sounds of the letters composing it.

One great excellence of this method is the aid it affords in teaching children to read naturally and with correct expression. If no other object were accomplished, this alone would be sufficient to recommend it to the favorable regard of school officers and teachers.

The exact point at which the names of the letters are to be introduced, is not a matter of much importance, so that we preserve the main features of the system unimpaired. The *natural* order of the different steps is manifestly the following: First, the *object itself* is presented to the senses; next, the *name* of the object is pronounced and learned. As the spoken word consists of *sounds*, the next step in order is to analyze the sounds and utter them separately. After this, the *names* of the letters are learned.

If any teacher prefers to teach the *names* of the letters as fast as they occur in the words learned, no harm can result from such a course. But the *sounds* of the letters, which are the real elements of all spoken words, should by all means be learned as early as the names.

Of the efforts of Mr. Wells in his present situation, we can only add the following testimony from LUTHER HAVEN, Esq., President of the Board of Education of Chicago—a gentleman who has been untiring in his efforts to improve the schools of his adopted city:—“Mr. Wells brought to the service of the Board of Education, and to the interests of the schools all those admirable traits of character which had tended so greatly to enhance his success and usefulness in every position he had previously occupied, and these traits he has devoted with untiring industry and perseverance, with all the powers of his well-trained mind, to the building up of our public schools, and placing them in such a condition, as to command the confidence and support of our whole community. His labors have been eminently successful. For the high position now held by our schools in the estimation of our whole community, for the harmony and good feeling now existing among all parties in relation to them, we are indebted, in no small degree, to the prudence, care, kindness, and firmness of Mr. Wells. To sum up in a few words, his doings have been abundant and satisfactory—his success eminent and enviable.”

But the influence of such a man can not be confined within town or city limits. He was one of the first members of the Illinois State Board of Education, elected for a period of six years, and he has rendered valuable and judicious aid in the establishment of the Illinois

State Normal School, and in promoting the best interests of popular education in the state.

In closing this brief memoir of Mr. Wells as an educator, we would call the attention of young students and teachers to a few only of those prominent features which are at once most characteristic of him and which should lead others to a career as widely useful and successful, should similar opportunities of labor be presented. While he has risen to a high position among the leading educators of our times, it is not believed that his success has been so much the result of unusual natural abilities, as of untiring and well-directed application. Many to whom the author of life has been more bountiful in the bestowment of natural gifts, have been entirely surpassed by him, simply because his talents were improved by constant and varied use, while theirs were carefully "laid up in a napkin."

Mr. Wells may be justly classed with what are called self-made men. Marcel, in his treatise on language, says, "The eminence attained by great men is always the result of their own industry,"—and this it is believed, is strictly true. Most of our truly great and eminent men, in any department, have gained their high position by close application and untiring industry. They have kept their talent bright and productive by constant and wise use. B. B. Edwards, D. D., in the essay prefixed to his "*Biography of Self-Taught Men*," says:—"Men of this class have the faculty of clearly communicating their knowledge to others. In this respect they make excellent teachers. They have worked their own way up the steep of knowledge, and they can point out the path in which they came."

It was a cardinal principle of Mr. Wells' during his whole course as an educator, that the teacher's highest mission is not to impart instruction merely, but rather to rouse and call forth the pupil's own energies. He well knew what obstacles lie in the scholar's path and also how to surmount them. Many a desponding pupil has been quickened and cheered on to successful effort by the kind words of Mr. Wells, calling them through the devious and difficult paths he had himself walked, up to positions of usefulness and honor. He knew the value of words of encouragement, and he also knew how, when, where, and to whom to give them.

During his preparatory course of study, he was at one time on the point of abandoning his books and turning his attention to other pursuits, on account of the serious interruptions and embarrassments to which he was subjected while attempting to continue his course without pecuniary assistance. In this emergency he sought the advice of a shrewd and intelligent manufacturer, a graduate of Yale College,

whose means had always been equal to his wants. To his great surprise, his friend assured him that he was in the best possible circumstances to insure success. "When I was in college," said his friend, "I had money enough, and the same was true of about half of my class-mates. Many of us burned the candle at both ends all the way through college. And now, if you ask who of all the class have attained to any degree of eminence, you will find them, almost without exception, among those who had to struggle through their own course with little or no assistance." All who have opportunity for observation will admit the general truth of this statement. Its effect on young Wells was to clothe Latin and Greek with new attractions, and obstacles were afterward welcomed as the surest and best helps to success. He was always hopeful. He felt that whatever was worth accomplishing could be achieved by patient effort, and he was deterred by no obstacles from attempting to do what he felt ought to be done. And it may be asserted that hundreds of his pupils have imbibed his spirit, and, in consequence, become working and efficient men;—men of minds, men of self-reliant spirit, men of indomitable perseverance, men of marked success.

The following extract from a lecture on Self-Reliance, delivered by Mr. Wells before the American Institute of Instruction, embodies one of the principles by which his own life was governed, and which he never failed to inculcate in the minds of his pupils.

The highest and most important object of intellectual education, is mental discipline, or the power of using the mind to the best advantage. The price of this discipline is *effort*. No scholar ever yet made intellectual progress without intellectual labor. It is this alone that can strengthen and invigorate the noble faculties with which we are endowed. However much we may regret that we do not live a century later, because we can not have the benefit of the educational improvements that are to be made during the next hundred years, of one thing we may rest assured, that intellectual eminence will be attained during the twentieth century just as it is in the nineteenth—by the *labor of the brain*. We are not to look for any new discovery or invention that shall supersede the necessity for mental toil; we are not to desire it. If we had but to supplicate some kind genius, and he would at once endow us with all the knowledge in the universe, the gift would prove a curse to us, and not a blessing. We must have the discipline of *acquiring* knowledge in the manner established by the Author of our being, and without this discipline our intellectual stores would be worse than useless.

The general law of intellectual growth is manifestly this:—whatever may be the mental power which we at any time possess, it requires a repetition of mental efforts, equal in degree to those which we have put forth before, to prevent actual deterioration. Every considerable step of advance from this point must be by a new and still higher intellectual performance. There are many impediments in the path of the student, which it is desirable to remove; but he who attempts to remove all difficulties, or as many of them as possible, wars against the highest law of intellectual development.

Had Mr. Wells been content to follow the example of most beginners in teaching, and simply "kept school" six hours daily, "boarded 'round" and received his ten dollars per month, he would never have gained any eminence, or achieved any desirable success.

But he engaged in teaching *con amore*, and gave to it all his thoughts, his talents, his energies. He was not content with the old ways, unless fully satisfied that they were the best ways. Consequently he was always aiming to improve in methods of teaching. Some of the innovations introduced in his first school, were regarded with distrust by the committee and viewed as unreasonable—or, perhaps, as notional. The introduction of Colburn's "*First Lessons in Mental Arithmetic*,"—now considered as almost a *sine qua non* by most good teachers—was only permitted after he had made a special visit to nearly every parent in the district. He constructed a blackboard with his own hands, and even the painting, or rather coloring, was extemporized by his mother for the occasion. He procured a set of Outline Maps, drawn on cloth, and wrote out a system of topics for Olney's Geography, which were copied by the class and used in connection with the maps at recitations. These topics were subsequently printed and used in other schools. At the close of his school, it may be added, the committee were so well pleased with the results that they purchased the Outline Maps and the blackboard, and retained them for the use of the district.

From the commencement of his course Mr. Wells has aimed to be eminently practical in all his efforts and writings. As a superintendent of schools, he has by his good sense and judgment gained the entire confidence of those associated with him, and the results of his suggestions and plans have convinced all that he was no visionary schemer. All his counsels and all his doings have shown that he was no less wise in deeds than in words. With him it has not been mere theory, but theory and practice.

Mr. Wells has ever been remarkably methodical in all his plans and arrangements. It has been owing to this, in no small degree, that he has been able to accomplish so much for himself and for the cause to which his energies have been devoted. System and exactness have been applied to his reading, his studies, his educational labors, and to all his engagements. Though always busy, he has, at all times, arranged to perform his part in any public measures which have called for his aid. No item of business with which he has had anything to do in connection with others, has ever been delayed for a single hour on account of any negligence on his part. Prompt in fulfilling every engagement, it has always been safe to rely upon him. The writer has, in numerous instances, been associated with him on committees and no negligence or dilatoriness on his part ever occasioned a minute's delay or loss of time. We well remember a certain occasion on which we were to meet him at a specified place and hour—at a point some eight miles distant from his residence and

our own. As we expected, he was on the ground at the precise time specified, and this regard to promptness was always prominent in his mind and in his practice—so that all who knew him placed the most implicit confidence in any arrangement or agreement made by him. This exactness on his part has had a very salutary influence on all connected with him whether as associates or as pupils. He has been in these particulars a model worthy the imitation of all teachers.

Another trait which should be held up for the special imitation of others, is his strong professional feeling. From the outset he believed that every man owes something to his chosen profession; and under this belief he has ever been ready, "in season and out of season" to labor for the improvement and true elevation of the teacher's calling. All who have met him at educational associations and gatherings will remember with what earnestness and interest he engaged in all discussions and plans designed for the common good. Whenever he rose to speak, all felt that they were about to listen to words from one whose heart was full of the great work before him, and one who was striving in every honorable way, to magnify the vocation of the teacher. If all teachers were imbued with the same *esprit de corps* ever manifested by Mr. Wells, how potent and extensive would be their influence!

XI. AGRICULTURAL EDUCATION

III

FRANCE

THE great industrial interest of agriculture is wisely recognized and cared for by the government of France in the following manner:

1. There is not simply a bureau with a clerk, but a department with a secretary or minister, to collect and disseminate information as to the condition and improvement of agriculture, and the agricultural population, and to administer all laws which may be passed on the subject. An annual report, statistical and suggestive, is made by the minister.

2. Agricultural inspectors are employed; some to visit foreign countries, gather information, and import plants and seeds, and improved stock, to be disposed of at public sales; and others to visit particular districts of the country, and communicate information and advice, as they may see that they are needed.

3. Encouragement is given to agricultural societies and shows. In 1850, there were over one million of members enrolled in the various central, departmental and local societies, for the promotion of horticulture and agriculture. Premiums are offered for improvement in every branch of agricultural industry.

4. In the Conservatory of Arts and Trades, provision is made for a collection of models and drawings of agricultural buildings and implements, and for courses of gratuitous lectures on the principles of chemistry and mechanics as applied to agriculture.

5. The government has organized an extensive system of agricultural and veterinary instruction, and makes liberal appropriation for its support.

The earliest effort in Europe to provide for special instruction in agriculture, was made by Abbe Rosier in France, who submitted to Turgot, minister of Finance, in 1775, a "Plan for a National School of Agriculture in the Park of Chambord," and again to the National Assembly in 1789. After his death, the plan was submitted to Bonaparte, but without success. In the mean time, Fellenberg opened an institution in Switzerland. The first experiment in France was made by M. de Domebaale at Roville, in 1822, which, for want of sufficient capital, was abandoned in 1842. Its success was such as to lead to the establishment of the Royal Agronomic Institution at Grignon in 1827, the Institute of Coetbo in 1830, of the school at Grand Juan in 1833, and the model farm of Saulsaie in 1842. In 1847, there were twenty-five agricultural schools in operation, to several of which orphan asylums and penal colonies were attached. At the close of that year, the government introduced a measure for the better organization of agricul-

tural instruction, which was voted by the National Assembly on the 3d of October, 1848, and the sum of 2,500,000 francs was appropriated to carry its provisions into execution.

AGRICULTURAL EDUCATION.

The law of 1848 provides for three degrees of professional instruction in agriculture at the expense of the State. 1. A farm school in each (86) department, and ultimately, for each (363) *arrondissement*. 2. A higher seminary, called a District or Regional School, embracing two or more departments; and 3. A National Agronomic Institute, a sort of normal school of agriculture.

MODEL FARM SCHOOL.

The farm school is a rural enterprise, conducted with ability and profit, in which the pupils perform all the labor, and receive a practical course of instruction in agriculture. The objects aimed at are: *first*, to furnish a good example of tillage to the farmers of the district; and *second*, to form agriculturists capable of cultivating intelligently, either upon their own property or that of others, as farmers, managers, overseers of cattle, &c.

The school is open to pupils who are at least sixteen years of age, have a good constitution, and have received an education in the primary schools. Each school must have at least twenty-four pupils, before it can receive aid from the government. The aim is to have pupils enough on each farm to carry on all its operations in the field, nurseries, and gardens, without any other help, except that of the teachers.

The officers or teachers selected and paid by the government, are a *director* with a salary of 2,400 francs; a *head workman* with a salary of 1000 francs; a *nursery gardener*, with a salary of 1000 francs; a *veterinary surgeon*, with a salary of 500 francs; besides these, in some of the schools, there are special assistants, such as shepherds, silk-growers, &c., &c.

The practical course extends through three years. The first is devoted to simple manual labor; the second to the charge of animals; and the third to the oversight of various operations on the farm. The hours appropriated to study are devoted, 1st, to copying and writing out the notes taken of the instructions of the different leaders: 2d, to reading a manual of elementary agriculture; and 3d, to lessons given by the overseer of accounts, on arithmetic, book-keeping, and surveying. Religious instruction is given by the clergy in the neighborhood.

The director works the farm at his own risk, and must so conduct it, as not only to give as good examples of tillage, but as profitable return of crops, as other farms in its neighborhood, otherwise the patronage of the government is withdrawn.

Pupils are boarded and instructed without charge, and are also allowed a small sum toward clothing. Prizes are also awarded for good conduct and proficiency.

Seventy-one Model Farm Schools were in operation in 1851, with over 1,500 students in attendance on a course of practical instruction extending through three years.

DISTRICT, OR REGIONAL SCHOOLS OF AGRICULTURE.

France is divided into a number of agricultural districts, in each of which there is to be a District School of Theoretical and Practical Agriculture. They have three objects in view:

1. To form enlightened agriculturists, by teaching them the principles of agriculture.
2. To offer an example, or model, of practical agriculture of a high order, and constantly advancing.
3. To make experiments for improving the cultivation of the soil.

The instruction in these schools is of a much higher order than in the farm schools, and is adapted not to prepare laborers on the farm, so much as men to direct agricultural affairs. The farm connected with the school is expected to present an enlightened system of culture, and to adapt that culture to the wants and peculiarities of the district in which it is situated. The director, also, is no longer a farmer, or proprietor, laboring at his own risk, but an agent employed by the government, and accountable to them, and subject to their direction.

The instruction is both theoretical and practical, embracing the following six professorships:

One professor of rural economy and legislation.

One of agriculture.

One of zootechny, or the economy of animals.

One of sylviculture, (cultivation of forest trees,) and of botany.

One of chemistry, physics, and geology, applied to agriculture.

One of rural engineering, (irrigations, rural constructions, surveying, &c.)

The course on rural economy and legislation describes the relation between rural productions and the public revenue, as well as the different branches of industry. It shows what circumstances are favorable or unfavorable to such or such a system of cultivation, or to such or such a speculation in animals, or vegetables, according to the situation of the lands, the facility of communication, and demand for the products by the people of the surrounding country. The course embraces also rural legislation.

The course on agriculture embraces the study of the soil, of manures, of instruments of tillage, of different cultivated plants, an estimate of the different modes of culture, and the theory of the distribution or rotation of crops.

Zootechny treats of the production and amelioration of animals. The professor gives at first some ideas of anatomy and physiology generally, and then treats, in a practical way, of the raising of domestic animals, of their support, of their amelioration, of their hygiene, and their production.

The professor of sylviculture and botany gives first, a summary sketch of vegetable physiology and botany applied to agriculture. He teaches the subject of sylviculture, (cultivation of woods,) and of forest economy, with special reference to the training, working, and preservation of the forests of individuals and the communes.

The professor of chemistry, physics, geology, &c., has a wide field, as his titles show. His chief object is to take those views of the sciences named which bear directly upon agriculture.

The professorship of rural engineering embraces geometry, mechanics, and linear drawing, as applied to rural architecture, to the construction of agricultural instruments, and particularly to irrigations.

To second the lessons of the professors, an equal number of tutors are appointed. Their duties are to explain in private, to the pupils, whatever is obscure or difficult in the oral instruction. They also see that notes are taken of the lectures, &c.

Each school has its library, its philosophical and chemical cabinet, adapted especially to agriculture, its agronomic museum of geology, zoology, botany, and agricultural technology.

The pupils have an opportunity of witnessing on the farms connected with these schools, all the important agricultural operations, also specimens of the best breeds of animals, and the mode of taking care of them, and using them: and they engage personally in all the important operations connected with husbandry, so as to know how to conduct them in after-life.

The number of scholars admitted is fixed by the government, and varies at the different schools. The price of board is 750 francs, (\$138.)

The State furnishes several scholarships to each school. Half of them is given to the most deserving of the pupils from the farm schools, placed at the regional schools. The other half is divided among the scholars who are the most distinguished, after six months' trial, for their labor and conduct. Scholarships from the national agronomic institute, are also given to those most successful in study and conduct.

Towards the close of the third year, examinations are held, and to those who sustain them, diplomas are given, and the way is laid open for their admittance to the national institute.

To these schools a farm is always attached, for the purposes already indicated; also, a manufactory of agricultural instruments, an establishment for silk, a place for preparing liquid manures, distillery, oil mill, dairy, sawmill, &c.

The head men on the farm are essentially the same as those already described as connected with the farm schools.

NATIONAL AGRONOMIC INSTITUTE.

To give unity and efficiency to the system of agricultural instruction, the law provides for the establishment of a National Agronomic Institute on a portion of the magnificent garden of Versailles. Suitable buildings, and a library, laboratories, and appropriate collections of spe-

cimens, models and drawings, of implements, animals, seeds, plants, &c. are to be provided by the government. The plan embraces

1. A complete faculty of agronomic science.
2. A superior normal school of agriculture.
3. A higher institute for agriculturists.

To meet the wants of this latter class especially, a large farm is connected with the school. Here will be performed, at the expense of the State, all the experiments necessary to the progress of agronomic science, and to verify practically all the innovations and improvements proposed by others, before they are recommended to the public.

The theoretical and practical parts of this institute are really distinct, but they are placed under the general government of one director.

The professorships are nine, as follows:

One chair of rural economy and legislation.

One of agriculture.

One of zootechny, or the economy of animals.

One of sylviculture.

One of rural engineering, embracing leveling, irrigation, construction of roads, rural architecture, and mechanics applied to agricultural instruments.

The above professorships belong to practical agriculture. The others belong to the theory of the subject.

One of terrestrial physics and meteorology.

One of chemistry applied to agriculture.

One of botany, and vegetable physiology.

One of applied zoology.

Here, as in the lower schools, a number of tutors is appointed equal to the number of professors.

In addition to the director, professors, and tutors, the following officers will be appointed:

A prefect of studies.

A curator of the collections.

A librarian.

An overseer of studies.

To these will be added a corps of head men to oversee and manage the affairs of the farm. These will, in part, be called from the farm schools. For example, the institute will need twenty-one herdsmen, twenty-one grooms, twenty-one shepherds, and fifteen gardeners.

The French minister adds, "The end of the institute at Versailles, is not merely to afford agricultural instruction, but to open the way for studious men, who wish to direct their labors toward the application of science to rural industry. This is the first attempt of the kind that has been made. Industry has enriched the learned men who have explored the domain of the physical sciences and of chemistry for this object. But if agriculture has given reputation to any, it has not procured for any one a position which would enable him to make that the center of his studies. The institute at Versailles is intended to change this state

of things by offering as a prize of laudable ambition, to those who direct their researches to agriculture, a certain number of chairs, before which an immense field opens."

VETERINARY EDUCATION.

In addition to the above system of agricultural education, the government of France maintains three institutions (at Lyons, Alfort, and Toulouse,) at an expense of over \$75,000 a year, to qualify persons by the study of comparative anatomy and physiology, and by opportunities of witnessing hospital practice, and investigating the symptoms and phenomena of disease in domestic animals, to practice veterinary surgery and medicine. In countries where a large number of horses are required for cavalry service, and in all countries where live stock constitutes so large a portion of the motive power and capital of every agriculturist, there should be one or more institution of this kind. The first in the world was established at Lyons in 1762; the second, at Alfort in 1766; the third, at Berlin in 1792; and the fourth, at London in 1793.

VETERINARY SCHOOL AT ALFORT.

The Veterinary school at Alfort was instituted in 1766. It is beautifully situated on the river Seine, about six miles from Paris, and embraces every facility, of building, anatomical specimens and preparations, books, and professors, for a complete course of instruction in veterinary medicine and surgery. The following sketch of the school is taken from Mr. Colman's Report:

A student at his entrance must be well versed in the common branches of education; and a full course of instruction requires a residence of four years. The number of pupils is limited to three hundred. Of these, forty are entirely supported by the government. These are educated for the army; and are required not only to become versed in the science and practice of veterinary medicine and surgery, but likewise in the common business of a blacksmith's shop, as far as it is connected with farriery. Students can be admitted only by the nomination or with the consent of one of the great officers of government, the minister of commerce and agriculture. The expense of board and lodging is about fifteen pounds, or eighty dollars a year; the instruction is wholly gratuitous, the professors being supported by the government.

The establishment presents several hospitals or apartments for sick horses, cows, and dogs. There are means for controlling and regulating, as far as possible, the temperature of the rooms, and for producing a complete and healthy ventilation. There are stables where the patients may be kept entirely alone, when the case requires it; and there are preparations for giving them, as high as their bodies, a warm bath, which, in cases of diseased limbs or joints, may be of great service. There is a large college with dormitories and dining-rooms for the students; houses for the professors within the inclosure; rooms for operations upon animals, and for anatomical dissections; a room with a

complete laboratory for a course of chemical lectures; a public lecture room or theater; and an extensive smithery, with several forges fitted up in the best possible manner. There are likewise, several stands, contrived with some ingenuity, for confining the feet of horses, that students may make with security their first attempts at shoeing, or in which the limb, after it has been separated from its lawful owner, may be placed for the purpose of examination and experiment.

An extensive suite of apartments presents an admirable, and, indeed, an extraordinary museum both of natural and artificial anatomical preparations, exhibiting the natural and healthy state of the animal constitution; and, likewise, remarkable examples of diseased parts. The perfect examples of the anatomy of the horse, the cow, the sheep, the hog, and the dog; in which the muscular integuments, the nerves, the blood-vessels, and, indeed, all the parts, are separated and preserved, and exhibited, by the extraordinary skill of an eminent veterinary surgeon and artist now deceased, who occupied the anatomical chair of the institution, exhibited wonderful ingenuity in their dissection and preservation, and present an interesting and useful study, not to the medical students only, but to the most ordinary as well as the most profound philosophical observer. I have seen no exhibition of the kind of so remarkable a character.

The numerous examples of diseased affections, preserved, as far as possible, in their natural state, strongly attract observation, and make a powerful appeal to our humanity in showing how much these poor animals, who minister so essentially to our service and pleasures, must suffer without being able to acquaint us with their sufferings; and how often they are probably compelled to do duty, and driven to the hardest services by the whip or the spur, in circumstances in which a human being would not be able to stand up. A great number of calculi or stones, taken from the bladders of horses after death, are exhibited, of a large size, and, in some instances, of a very rough exterior, which must have excessively irritated and pained the sensitive parts with which they came in contact. It is scarcely possible to overrate the suffering which the poor animal must have endured under such an affliction.

The department for sick dogs, containing boxes for those which require confinement, and chains for such as require to be kept in the open air, and a cooking apparatus and kitchen for the preparation of their food, was spacious, well-arranged, and contained a large number of patients. Any sick animals may be sent to the establishment, and their board is to be paid at a fixed rate of charges; twelve sous or cents, or sixpence per day for a dog; and fifty sous or cents, or twenty-five pence, for a horse, including medicine, advice, and attendance. In cases of epidemics or murrain prevailing in any of the districts of France, the best attendance and advice are sent from these schools to assist in the cure, and especially to watch the symptoms and progress of the malady. In countries where large standing armies are maintained, and where of course there are large bodies of cavalry and artillery to be attended

upon, as well as waggon-horses for carrying the supplies, the importance of veterinary surgery is vastly increased; but in countries where no standing armies exist, the number of horses kept for use or pleasure, and of other domestic animals, bears a much larger proportion to the number of human beings than we should be likely to infer without inquiry; and renders the profession highly important.

A large and select library belongs to the establishment, and a garden for the cultivation of medicinal plants, and likewise of the grasses employed in agriculture. A farm is likewise attached to the place, on which instruction is given in practical agriculture, and numbers of various kinds of animals are kept for the purpose of breeding the best, and illustrating the effects of crossing. Some selected animals of domestic and of the best foreign breeds, horses, bulls, cows, and sheep, are kept for this special object.

AGRICULTURAL REFORM SCHOOLS.

In addition to the special schools of agriculture and the associated arts and sciences above described, there is a class of institutions not only in France, but in Germany, which are instrumental in diffusing a large amount of practical instruction in farm and garden industry, while they are accomplishing a still higher purpose in cultivating the long neglected or abused souls of their pupils—we refer to the Reform Farm Schools, of which a particular account will be given further on.

AGRICULTURAL SCHOOL AT GRAND JOUAN.

THE Agricultural school at Grand Jouan, in Brittany, was established in 1833, by M. Neviere, who had been trained in this department of education in the Renville Agricultural school. In 1848 it was remodeled by the government and placed under the administration of the minister of agriculture.

SUBJECTS OF STUDY AND LECTURES.

Mathematical Sciences :—Arithmetic, Algebra, Geometry, Mechanics, Surveying, Leveling, Stereometry, (measuring solid bodies,) Linear Drawing.

Physical and Natural Sciences :—Physics, Meteorology, Mineral Chemistry, Mineralogy, Geology, Botany.

Technological Sciences :—Organic Chemistry, or Agricultural Technology, Agriculture, Arboriculture, Sylviculture, Veterinary Art, Agricultural Zoology, Equitation.

Noological Sciences :—Rural Architecture, Forest Economy, Rural or Farm Accounts, Rural Economy, Rural Law.

ABSTRACT OF THE COURSE OF LECTURES ON GENERAL AGRICULTURE.

Agricultural Formation, (Terrain),—1. *Soil* :—Constituent Elements, Classification of the Formation: Argillaceous, Siliceous, and peaty soils: Physical properties: Causes which modify these properties: Influence of soil on vegetation.

2. *Sub Soil* :—Sub soil active: Sub soil inert: Influence of sub soil on the soil and on the life of plants.

Agricultural Geography :—Astronomic situation of France: Mountains: Valleys, Plains, Rivers.

Agricultural Physics :—Atmospheric Air: Caloric: Light: Darkness.

Agricultural Meteorology :—Winds: Fogs: Dew: Rain: White Frost: Frost with Ice: Snow: Hail.

Climatology :—Influence of Climate: Climate of France: Regions.

Fertilization :—Considerations preliminary: Fecundity and Fertility.

1. *Improvement* :—Clay: Rocks: Sand: Slates: Lava: *Plombage*: Irrigations: Ditching: Ploughing: Movement of the sub soil: *Colmatage*.

2. *Stimulants* :—Stimulants of Mineral Origin: Lime: Marl: Calcareous earth: Broken shells: Sea sand: the Whiting: Shell fish: Plaster: Fire Ashes: Sulphate of Iron: Salts of Potash: of Soda: of Ammonia.

Stimulants of Vegetable Origin :—Soot: Ashes: Leached Ashes.

3. *Manures* :—Animal Manures: Excrements: Urine: Pigeons' Dung: Guano: Excrement of Animals: Muscular Flesh: Blood: Fish: Fat: Oil: Woolen cloth: Horn: Horse hair: Human hair: Feathers.

Vegeto-Animal Manures :—Litter: Horse dung: of Sheep: of horned Cattle: of Swine: of Rabbits.

Animal Manures Mineralized :—Animal charcoal: Bone.

Vegetable Manures :—Green crops ploughed in. Manure and Aquatic plants: Turf: poor Vegetables: Oil Cake: Tan: Meah: pulpy matters: Leaves: Stubble.

Liquid Manures :—Urine of the Domestic Animals: Flemish Manures: Urine Water from *Fecularies*.

Compound Manures :—Manure of Jauffret and Lane: Compost: Slime of Ponds: River Mud: Marine Mud.

Breaking up the Soil :—1. Work Animals: Cattle: Horses: Cows: Mules: Asses: Race: Age: Mode of tackling: Length of working: Treatment: Necessary proportion.

2. *Instruments* :—Plough with or without fore wheels: Harrow: Scarifiers: Rollers: Instruments for second dressing: Weeders: *Extirpators*: Necessary proportion.

3. *Tillage* :—Theory and Practice: Soil: Temperature: Flat Tillage: Flat Tillage in rows: Flat Tillage in ridges: Tillage by digging and by grubbing.

4. *Methods of moving the earth* :—Harrowing : Rolling : Second Ploughing : *Buttages*.

5. *Clearing Land* :—Heaths : Woods : Peaty lands : Clearing by the hand : by the Plough : Hoeing : Destination of the ground.

Draining :—Arable Land : Morasses : Ponds : Nature and destination of the soil.

Irrigation :—Theory and Practice : by Infiltration : Renewal of the Water : *Planches Bombees*.

Quantity of water by the acre, and according to the nature of the soil. Value of the bottoms irrigated and not irrigated. Mode of working these almost irrigated. Fertility and value of the products.

Fences :—Walls : Ditches : Hedges, living or dead.

Sowing :—Theory and practice : Sowing in lines : at random : selection, renewal, cleansing, and preparation of the seeds : Burying them by the harrow : by the plough.

Method of Treatment :—Weeding : Cleaning of thistles : stripping off the leaves : (*Effuillage* :) Bringing into the light.

Harvesting. General Considerations.

1. *Harvesting of Fodder* :—Instruments and Machines : Mowing : Hay making : Grindstones.

2. *Harvesting of Grain* :—Instruments and Machines : Mowing : Reaping : Threshing : *Liage*.

3. *Harvesting of Roots* :—Pulling up by the hand : by the plough : Uncovering : Cleaning.

Selection of the methods of preparing the Soils :—According to atmospheric circumstances : Nature of the Soil : its condition : its destination.

Distribution of Labor by Rotation :—Normal conditions : Exceptional conditions.

Rural Architecture.

Materials :—Siliceous, calcareous and argillaceous rocks : Fat, meagre, and hydraulic Lime : Sands : Mortar : Cements : Pozzolana : Plaster : Wood : Iron : Paving Brick : Roofing Slate : Tiles : Lead : Zinc : Leather : Ropes.

Works :—Foundations : Terracing : Properties of Earths.

Masonry :—Foundation Walls : High Walls : for support : for inclosure : *Plastering* : *Pise*.

Carpentry :—*Assemblages* : *Combles* : *Pans de bois* : Partitions : Staircases, *Joiners' Work* :—Floors : Gates : Windows : Shutters.

Iron Work :—Large Iron : Ironing the Buildings.

Roofing :—Tiles : Slate : Thatch : Zinc : Bitumen.

Painting and Glazing :—Oil Painting : Distemper Paintings : Badigeons, (coloring) Window glass.

Paving and Bricking.

Estimate of the Works :—Masonry : Carpentry.

Specification :—Form of the works.

Edifices :—Stable : Cow house : Sheep fold : Hog pen : Hen house : Pigeon house : Silk worm nursery.

Animal products :—Dairy : Cheese house.

Vegetable products :—Barns : Granaries : Wine cellars : Cellars : Corn pits, Ovens.

Agricultural Manufactures :—*Feculery* : Distillery : Sugar manufactory.

Reservoirs :—Watering places : Wash house : Wells : Cisterns : Ditches for urine : Ponds.

Dwelling house :—Form and Proportion.

Irrigations :—Dams : Taking out the Water : Sluices : Canals : Weirs : Slopes.

Drainage :—Damming up : Trenching : Cesspool : Machines for drainage.

Roads :—Soil : Slope : Outline : Leveling : Materials : Support : Bridges : Estimate of Excavation and Embankment.

Group of Edifices composing a Farming Establishment :—Relation to the fertility of the soil and the culture and extent of the farm.

AGRICULTURAL SCHOOL

AT

GRIGNON IN FRANCE.

THE best agricultural school in France is situated at Grignon, about twenty miles from Paris. It consists of an estate of about 1200 acres belonging to the French Government, which is rented for a term of forty years to a society of gentlemen interested in agriculture, who have the management of the institution, and who subscribed 300,000 francs, or about 60,000 dollars for conducting it. The government is represented in the board of management. The course of instruction embraces both the science and the practice of agriculture, and is designed for a class of students, who depend upon their own exertions for a livelihood, and especially for those persons who manage the estates of large proprietors, who in England or Scotland are called bailiffs, or stewards, and in France, agricultural engineers. The following is abridged from Colman's "*European Agriculture and Rural Economy*."

The term of residence at Grignon is fixed at two years; but the pupil remains three months after his studies are completed, in order to digest and draw up the entire management of an estate, and describe its details in every department.

The students are divided into classes denominated *internals* and *externals*, or *resident* and *non-resident*. The former reside entirely in the house, where they are lodged and boarded, and pay about 800 francs, or 32 pounds, or 160 dollars, per year. The *externals*, or *non-residents*, provide for themselves, or lodge at the houses of the neighboring farmers, and pay a very small amount for their instruction. This arrangement is particularly designed to benefit poor scholars. Both classes are equally subject to the general discipline and rules of the institution; and are alike engaged in the same works and studies.

There are lectures every day in the week. At the commencement of each lecture, the professor examines the pupils on the subject of the preceding lecture; and they are required often to take notes, and present a written report of the lecture. Besides the professors, there are two monitors, who have been educated at the school, who labor with the pupils in the fields. They are expected, and it is their duty, to question the pupils on the subjects which have been treated in the lectures; to show their application; to illustrate what may have been obscure; and, in short, to leave nothing unexplained which is liable to misunderstanding or error. There are two public examinations annually, in which the scholars are subjected to a rigorous questioning in what they have been taught. If, at the end of two years, their conduct has been approved, and their examination is met successfully, they receive a diploma from the institution.

They are not only employed in the general work of the farm, but particular portions of land are assigned to individuals, which they manage as they please, and cultivate with their own hands; they pay the rent and expenses of manure and team, and receive the product or its value from the institution. Certain of them are appointed in turn to take care of the different departments of the farm for a length of time—such as the hog establishment, the sheep establishment, the cattle, the horses, the implements, &c. &c. They have likewise adopted a practice, which seems much to be commended—that of employing workmen,

shepherds, cow-herds, &c., from foreign countries; as, for example, from Belgium and Switzerland, that they may in this way become acquainted with the best practices in those countries.

The time is thus divided and arranged among them:—they rise at four o'clock in summer, and at half-past four in winter. They go immediately into the stables to assist in the feeding, cleaning, and harnessing of the teams, and the general care of the live stock, according to their respective assignments. At half-past five they take a light breakfast; at six o'clock they go into the halls of study, and here they remain until eleven o'clock; at half-past six they attend a lecture, or course of instruction, which occupies them until eight o'clock; at half-past eight they are occupied in reading or in making notes of the lectures which they have heard, and the monitors before spoken of are present to render them any assistance required; at half-past nine o'clock there is another lecture or course of instruction for both sections, which occupies them until eleven, when they take their second or principal breakfast. From noon until five o'clock, the pupils are occupied in labor or practical operations. The professors, from time to time, take a section, and employ them in land-surveying, in drawing plans, and in levelings; others are occupied in mineralogical or in botanical excursions, or in inspecting the management of forest lands; others are occupied by their teacher in the practical management of farming implements, in the management of teams in the field, in sowing, and other general operations of husbandry, in a field devoted to these purposes; and a section, to the number of twelve, are every day employed in the direct labors of the farm, in ploughing, digging, harrowing, &c. &c. They work in company with the best laborers, that they may observe and learn their modes of executing their work. They are required to be attentive to every operation that is performed; and to present a full report of each day's work to the director-general.

At half-past five in winter, and at six in summer, they take their dinner. At seven o'clock in the evening they go again into the halls of study. From seven to half-past eight o'clock there is another course of instruction, or a repetition of what they have had before. Until nine o'clock they are occupied in their journals, or in making notes of their lectures. At nine o'clock the sleeping rooms are lighted, and they retire for the night.

There are several distinct professorships. The Professor of Practical Agriculture gives two courses; the one written, the other oral; and, like the lecture of a clinical professor at the bed-side, it is given in the fields. This professor understands not only how a thing should be done, but how to do it; and he can put his hand to every form of agricultural labor, such as ploughing, harrowing, sowing, managing the teams, feeding the animals, handling every instrument of agriculture, buying, selling, &c. In the words of his commission, his object is at the same time to form the eye and the hand; to teach his pupil how to learn; to command, to direct, and to execute. To this end it was necessary to form a complete agricultural organization for practice, independent of the exercises attached to the departments of the other professors.

The farm is composed of

Arable land, about	670 acres.
Land in wood and plantations	365 "
Irrigated meadows	35 "
Gardens, including vegetable, botanical, fruit garden, orchards, mulberry planta- tions, osiers, and nurseries	28 "
Ponds and water-courses	15 "
Roads and lands in pasture	50 "
Occupied by buildings	6 "

The animals on the farm include

Animals of draught or labor of different kinds	18
Oxen for fattening	20
Cows of different ages and races, and different crosses	100
Sheep, embracing the different kinds . .	1100
Swine establishment	100

There are likewise on the establishment workshops or manufactories, if so they may be called,—

- For the making of agricultural instruments ;
- A threshing-house and machine for grain ;
- A dairy room for the manufacture of different kinds of cheese and of butter ;
- A magnanerie, or establishment for silk-worms ;
- A stercorary for the manufacture of compost manures.

To all these various departments the attention of the students is closely called, and they are required to take some part in the labors connected with them.

Besides the farm belonging to the establishment, there is a field of one hundred acres devoted exclusively to the pupils, and principally to the culture of plants not grown on the farm. Here they make experiments in different preparations of the soil, and with different manures.

Every week two scholars, one of the second and one of the first year, are appointed to attend particularly to the general condition of the farm. Their business is to examine constantly the whole establishment ; the works that are going on in every department ; to look after the woods and the plantations ; the gardens ; the horses ; the fattening cattle ; the dairy ; the sheep-fold ; the swine ; and the hospital ; and to attend to the correspondence, and the visitors. This service lasts a fortnight, and there is a change every week, taking care always that there shall be one scholar of the first, and one of the second year associated. They attend to all the labors on the farm, and to all the communications between the principal director and inspectors, and the laborers. In the veterinary or hospital department of the establishment, they assist the surgeon in all his visits and operations ; take notes of his prescriptions ; make up and attend to the administration of his medicines ; and observe particularly the sanitary condition of the stables and buildings, where the live stock, sick or well, are kept.

On Saturday evening, each scholar, to whom this duty has been assigned, makes to his fellow-pupils a full verbal report of what has been done. This report is transcribed into a journal designed for that purpose ; and thus a continued history of the entire management of the farm is kept up. The whole school is divided into sections or classes of twelve each : six of two and six of one year's standing ; and these sections are constantly under the direction of the Professor of Practical Agriculture.

As the establishment at Grignon may be considered a model agricultural establishment, it may be useful to go more into detail in regard to the course of instruction pursued here.

Once a week there is an exercise, which embraces every thing relating to the management of the teams and the implements.

First, for example, in the different modes of executing any work, and using the utensils employed. The harness, the collar, the traces, and how attached, the shaft-horse or the cattle attached to the load, and the adjustment of the load to their backs ; the yoke, the single yoke, the double yoke ; the pack-saddle ; the harnessing of a saddle-horse ; the team for ploughing ; the team for harrowing ; the team for drawing loads ; the team for wagons, and for carriages with all their appurtenances ; every one of these matters is to be practically understood, as well as the whole management of the team in action.

In ploughing, the turning the furrow, its inclination, its breadth and depths ; the laying out of fields ; the management of large and small fields ; how to make the first furrow, and finish the last furrow ; to lay the land flat, to break it up in clods ; to plough it at a certain angle, to lay the land in curved furrows : these are all considered, and make part of the instruction given. The preparation, equipment, and use of every agricultural implement—such as ploughs, harrows, rollers, scarifiers, cultivators, sowing machines, trenching machines ; the practice of sowing, the different modes of sowing, whether broadcast, by dibble, or in drills ; the application of manure both as to time, mode, quantity, and preparation, and the composting of manures, are matters of inquiry and practice.

The cutting of grasses ; the making of hay, and the construction of stacks ; the harvesting of grain, by the scythe or by the sickle ; appendages to the scythe, called commonly the cradle ; and the grinding of scythes ; the making of sheaves, and of shocks, or stacks ; and the loading and the stowing away of grain, are matters to be understood.

A practical attention is required to every form of service on the farm; in the cow-house; the horse-stables; the fattening-stalls; the sheep-fold; the styes; the poultry-yard; the threshing-floor; the stercorary; and the store-houses for the produce of the farm of every description. The duties in this case embrace not merely the observation of how these things are done, but the actual doing of them until an expertness is acquired.

Leaving the practical department we come now to the course of studies to be pursued.

For admission into the institution some previous education is demanded, and the candidate is subjected to an examination before the principal and one of the professors.

First, he is required to present an essay upon some subject assigned to him, that his knowledge of the French language and grammar may be ascertained.

It is necessary, next, that he should be well grounded in the four great rules of arithmetic; in fractions, vulgar and decimal; in the extraction of the roots; in the rules of proportion and progression; and in the system of measures adopted in France.

In geometry, he must be well acquainted with the general principles of straight lines and circles, and their various combinations; and with the general measurement of plane surfaces.

In natural philosophy, he must understand the general properties of bodies; and be acquainted with the uses of the barometer and thermometer.

Candidates for admission must bring with them certificates of good character and manners, and must be at least eighteen years old. They are rigidly held to an attendance upon all the courses of instruction at the institution; and have leave of absence only on the application of their parents or guardians.

The studies of the first year are begun with a course of mathematics. Geometry and trigonometry are made a particular subject of attention; embracing the study of straight lines, and circular or curved lines on the same plan; the admeasurement of surfaces; the use of the compass; the recording of measurements; the delineation of measurements; the surveying of open fields, of woods, of marshes, of ponds or lakes; comparison of ancient land measures with those in present use; the use of the square, the chain, and the compass; the elevation of plans; the construction of scales, and the ordinary divisions of landed properties.

The study of various plans in any form; solid measure; conic sections, their principal properties, and their practical application; the theory and practice of leveling; the method of projections and their application; cubic measure of different solids, of hewn stones, of rough stones; the measurement of loose or broken stones, of sand, of lands excavated, of ground filled in, of stacks, and of heaps of manure; the cubic measure of trees standing, and of felled trees, of beams, and every kind of carpenter's work, of firewood, of walls, arches, and ditches or dikes; the ascertaining of the capacity of carriages, wagons, carts, wheel-barrows, pails, troughs, barrels and casks, basins or ponds, and different vessels in use, and of granaries and barns, and the determination of the weights of bodies. To all this is added a full course of trigonometry. They are accustomed likewise to the familiar use of the scale, of the square, of the compass, and of the compasses for delineation, and are often occupied in superficial, and in profile drawing.

The next course of instruction embraces embankments, the force of earths and liquids, or their pressure, at rest or in motion.

The materials employed in masonry; their uses and application in building—embracing stones, bricks, lime, sand, mortars, cements, plaster; and all the various modes of building.

The laying of walls for foundations; the erection of walls; the supports requisite; and the construction of passages, inclosures, and arches; the different kinds of woods, their absolute and relative strength; their duration, and the modes of preserving them; every kind of carpenter's work; the construction of floors, staircases, scaffoldings, and exterior supports; the constructions of roofs, in timber, with thatch, rushes, shingles, tiles, slates, zinc, or bitumen; the paving of roads, the formation of barn-floors, with clay or composition of bituminous substances which form a hard and enduring surface, are subjects of inquiry.

Next comes instruction in the blacksmith's shop, in the use of the forge, and the other implements of the trade; and in the various applications of iron and steel, of copper, lead, and zinc.

They are instructed, likewise, in the manufacture and use of leather and cordage; and in the various details of painting and glazing. The prices or cost likewise of all these different processes, are, as far as practicable, ascertained; and the modes of estimating such work are explained.

The next course embraces the elements of natural philosophy; and this includes chemistry, geology, and mineralogy.

First, the general properties of bodies, their divisibility, elasticity, and porosity or absorbent powers; and the special influence of this last circumstance upon the character of an arable soil.

The following are all subjects of study; bodies in the mass; the weight of bodies; means of determining the density of bodies and their specific gravity; the physical properties of the air; of atmospheric pressure; and of the construction and use of the barometer.

The study of hydrostatics; the pressure of liquids in their reservoirs, and against dikes and embankments; hydraulics; capillary attraction; the use of siphons and pumps.

The study of heat in all its various phenomena. Its effects upon solid and liquid bodies, and the changes which it makes in their condition; the phenomena of fusion, ebullition, and evaporation; of vapors; of the hygrometer or measurer of moisture, and the utility of the instrument; the conducting powers of bodies; of metals in particular; of free or radiating heat; application of heat to furnaces or kilns; laws of cold applied to bodies; power of emitting and of absorbing cold; measure of heat; means of determining the mean temperature of any place; influence of heat and cold upon vegetation; means of preserving certain vegetables from frost; construction and use of the thermometer.

Meteorology. Explanation of the phenomena of dew; of white frosts; of clouds; of rain; of snow; their various influences upon harvest, and the whole subject of climate.

Study of light. Progress of light in space; laws of its reflection; laws of its refraction; action of light upon vegetation. The subject of vision. The polarization of light; the explanation of the rainbow, and other phenomena of light; the prism.

Study of electricity. Conductors of electricity; distribution of the electric fluid in nature; power of the electric rods or points; electricity developed by the contact of bodies; of galvanic piles; their construction and uses. Atmospheric electricity; its origin; the formation of thunder clouds; action of electricity upon vegetation; of lightning; of thunder; of hail.

Chemistry. Simple bodies; compound bodies; difference between combination and mixture; atomical attraction; cohesion; affinity; what is intended by chemical agents. Explanation of the chemical nomenclature, and of chemical terms.

The study of simple bodies. Of oxygen; its properties; its action upon vegetation, and upon animal life. Nitrogen, sulphur, chlorine, carbon, hydrogen; their action upon vegetable and animal substances; their uses in veterinary medicine, and their influence upon vegetation.

The study of compound substances. Chemistry as applied to air and water; their importance in agriculture; their influence upon the action and life of plants and animals; the acids,—the sulphuric, the nitric, the carbonic, the chloric; the alkalies,—lime, soda, potassium, ammonia; their application in various forms. The salts in chemistry, and their various applications and uses; their importance as constituent parts of the soil, or as improvements.

The subject of marls and of earths, and of various substances deemed favorable to vegetation. Under the direction of the Professor of Chemistry, the students are taught to make analyses of different soils and marls.

To this is added a course of Mineralogy and Geology. This embraces the general properties of minerals; the physical, chemical, and mechanical character of mineral substances the most common.

The study of the distinctive properties and situation of those mineral substances which are most extended over the globe, and which are the most in use; such,

especially, as the carbonate of lime; comprehending stones for building, for the making of roads and walls, lime-stones, marbles, sulphate of lime, or plaster of Paris; and all the variety of mineral substances ordinarily found, and of use in agriculture or the arts.

A course of Geology follows this, embracing all the leading features of the science, with a special reference to all substances or conditions of the soil connected with agricultural improvement.

In this case, the professor makes frequent excursions with the pupils, that they may become familiarly acquainted with the subjects treated of in the lectures, and see them in their proper localities; so that the great truths of geological science may be illustrated by direct and personal observation.

Next follows a course of instruction in horticulture, or gardening.

Of the soil; the surface and the subsoil, and practical considerations relative to their culture and products.

Of the climate; the temperature, the aspect and local condition of the land in reference to the products cultivated; the amelioration of the soil, and the substances to be used for that object, with the modes of their application.

The various horticultural operations, and implements employed; and manner in which they are to be executed. The employment of water in irrigation; modes of inclosing by ditches or walls; walls for the training of trees; trellises and palings; and of protections against the wind.

The different modes of multiplication; sowing, engrafting by cuttings and by layers, and practical illustrations of these different processes. The culture of seed-bearing or grain-producing plants; the choice of them; their planting and management; the harvesting and preservation of the crops.

Under this head comes the kitchen-garden, and the choice of the best esculent vegetables for consumption; the nursery, and the complete management of trees from their first planting; the fruit-garden, considered in all its details; and the flower-garden.

The general results of gardening; the employment of hand, or spade-labor; the care, preservation, and consumption of the products, and their sale. The gardens at Grignon are upon a scale sufficient to supply all practical demonstrations.

The next division embraces the botanical garden. Here the whole science of botany is treated in its principles, and their practical application. The study of vegetable organization, with a full account of the prevailing systems and nomenclature of botany, and the classification of plants. Vegetable physiology, in all its branches, and vegetable anatomy; comparison of plants in their native and cultivated states; influence of cultivation in developing and improving plants; the propagation of plants in their natural condition, or by artificial means; the subject of rotation, or change of crops.

The practical application of these botanical instructions; and especially in the examination of plants or vegetables which may be useful in an economical view.

The garden of the establishment embraces what is called a school of trees; a school of plants for economical and commercial purposes; and a school of plants for common use. These are all carefully classed and distinguished by their proper names. The pupils are accustomed to be led into the gardens by the professor, that his instructions may be fully exemplified and confirmed.

The next branch of science taught at the school is veterinary surgery and medicine. This embraces a course of anatomy and animal physiology. It comprehends a full description of all the animal organs; and demonstrations are given from subjects, destroyed or obtained for that purpose. The functions of the different organs are likewise described; the organs of digestion, respiration, circulation, and the organs connected with the continuance of the species.

Every part of the animal, external and internal, is shown, its name given, its uses explained; its situation in relation to the other organs; the good points, the faults or defects in an animal; the peculiarities of different races of animals, with the modes of discriminating among them.

The choice of animals intended for different services,—as in horses for example, whether for the saddle, the race, the chase, the carriage, the road, the wagon, or the plough. Next, the treatment of the diseases of animals; the medicines in use; their preparation, and the mode of applying or employing them.

The next subject of instruction embraces a complete system of keeping farm accounts and journals, with the various books and forms necessary to every department.

From this the pupil proceeds to what is called rural legislation, embracing an account of all the laws which affect agricultural property or concerns.

The civil rights and duties of a French citizen, and the constitution of France.

Property, movable or immovable, or, as denominated with us, personal and real; of the divisions of property; of its use and its obligations.

Of commons; of laws relating to forests; of the rights of fishing in rivers; and of hunting.

The laws relating to rural police; to public health; to public security; to contagious or epidemic diseases.

The rights of passage of men or animals over the land of another; if any, and what.

Of crimes. Theft in the fields; breaking or destruction of the instruments of agriculture; throwing open inclosures; destruction or removal of bounds. Laying waste the crops by walking over them; inundation of fields by the stoppage of streams, or the erection of mills. Injury or breaking of public roads and bridges. Poisoning, killing, or wounding animals.

The duties of country magistrates; guards or justices of the peace. Of courts of law.

Of contracts, general and specific. Contracts of sale and prohibitory conditions. Of leases of different sorts. Of hiring labor; of the obligations of masters and servants. Of corporations, and the laws applicable to agricultural associations.

Of deeds, mortgages, bills of exchange, commissions, and powers of agency and attorney; insurance against fire, hail, and other hazards. Of the proof of obligations; written proof; oral testimony; presumptive evidence; of oaths. Of legal proceedings; of the seizure of property real or personal, and of bail.

The instruction proceeds under various courses, and I have so far given but a limited account of its comprehensiveness, and the variety of subjects which it embraces.

The study of the different kinds of soil, and of manures, with all their applications, and the improvements aimed at, take in a wide field. Under the head of soils there are the argillaceous, the calcareous, the siliceous, turf-lands, heath-lands, volcanic soils, the various sub-soils, loam, and humus.

Under the head of manures, come the excrements of animals, all fecal matter, poudrette, urine; the excrements of fowls; guano; *noir animalisée*; the refuse of sugar refineries; the relics of animals; oil-cakes; the refuse of maltings; tanners'-bark; bones, hair, and horn; aquatic plants; green-dressings.

The application likewise of sand, clay, marl, lime, plaster, wood-ashes, turf-ashes, soot, salt; the waste of various manufactures; mud and street dirt.

The plants cultivated for bread; wheat, rye, barley, oats, buck-wheat, millet, rice, and the modes of cultivating them.

For forage,—potatoes, beets, turnips, *ruta-bagas*, carrots, artichokes, parsnips, beans, cabbage.

Lucerne, lupins, sainfoin, common clover, *trifolium incarnatum*, vetches, peas, lentils, and plants for natural meadows and for pasturage.

To these are added, cobra, rape, poppy, mustard white and black, hemp, flax, cotton, madder, saffron, woad, hops, tobacco, chicory, teasels.

The weeds prejudicial to agriculture, and the insects which attack the plant while growing, or in the granary or barn.

The production of milk; and, as already said, the making of butter and cheese.

The production of wool; tests of its fineness; classing of wools; shearing of sheep; weight of the fleeces; washing of wool before or after shearing; and every particular in reference to the subject.

The fattening of beef, mutton, and pork. Choice of animals for this purpose; nutritive properties of different kinds of food; in what form to be given; grains entire or ground; roots cooked or raw, green or dry; the value of the pulp of beet-root after the sugar is expressed; refuse of the starch factories; of the distillery; of the brewery; fattening by pasture or in stalls; comparison of the live weight with that of the animal when slaughtered.

Care and management of the various kinds of domestic poultry.

Care and management of bees, with the construction of hives.

Care of silk-worms, and their entire management.

All these studies are pursued in the first year of the course; and the time is so arranged as to afford the diligent pupil an opportunity of meeting his duties, though the period is obviously too limited for the course prescribed.

The second year enjoins the continuance and enlargement of these important studies; the higher branches of mathematics and natural philosophy; an extended knowledge of chemistry; and a thorough acquaintance with mechanics, when the scholars with their professor visit some of the principal machine-shops and factories in Paris, or its environs, in order to become practically acquainted with them.

The students are further instructed in the construction of farm-buildings of every description; in irrigation, in all its forms; in the drainage of lands; in the construction of roads; in every thing relating to farm implements; and in the construction of mills and presses.

As I have said, organic chemistry is largely pursued with the various manufactures to which it is applicable; and animal physiology and comparative anatomy are very fully taught.

These studies are followed by a course of what is called agricultural technology. This embraces the manufacture, if so it may be called, of lime, of cement, of bricks; the preparations of plaster; the making of coal by various processes; the making of starch; the making and purification of vegetable oils; the making of wines, of vinegar, of beer, of alcohol, of sugar from the beet-root, including all the improvements which have been introduced into this branch of manufacture; and the pupils, under the direction of the professor, are taken to see the various manufactories of these articles, so far as they are accessible in the vicinity.

The whole subject of forests, of nurseries, of fruit trees, ornamental trees, trees for fuel, trees for mechanical purposes, are brought under the student's notice. This is a great subject in France, where wood has an extraordinary value; where immense extents of ground are devoted solely to the cultivation of trees; and where consequently it is most desirable to understand the proper kinds of wood to be selected for the purpose in view; the proper mode of forwarding the growth of the trees; and of removing them without prejudice to their restoration. Under this head comes the culture of

Trees for fuel.

Trees for timber.

Trees for house and ship building.

Trees for fruit, including all the varieties adapted to a particular climate.

Trees for their oily matter; such as olives.

Trees for their bark; to be used in tanning, and other purposes.

Trees for their resinous properties; such as pines.

Osiers and willows for making baskets.

Mulberry-trees for the support of silk-worms.

Next to this comes the culture of vines, and the establishment and care of a vineyard—a subject of great importance in France.

I have already spoken of the veterinary course of instruction. This embraces the whole subject of the breeding and rearing of animals; their training, shoeing, and harnessing, and entire management.

Under the head of farm accounts, the establishment itself at Grignon is made an example; the accounts of which are kept most accurately by some of the students, and open to the inspection of all.

A journal of every thing which is done upon the farm is made up every night; and these accounts are fairly transferred into a large-book.

To this is added, a particular account of the labors performed, and the occupation of each workman on the farm.

Next, a cash-book, embracing payment and sales, which are adjusted every fortnight.

Next, an account with the house; charging every article supplied or consumed.

Next, a specific account of each principal department of the farm; such as the dairy, with all its expenses and returns; the pork-establishment; the granary, &c.; which are all balanced every month, so that the exact condition of the department may be known.

As the students are advanced, more general and enlarged views of the various subjects of inquiry are given ; such as,

The taking of a farm, and the cultivation or management to be adopted.

The influence of climate and soil.

The crops to be grown ; and the rotation of crops.

Agricultural improvements generally.

The devoting of land to pasturage ; to dairy husbandry ; to the raising of animals ; to the fattening of cattle ; to the growth of wool ; to the production of grain ; to the raising of plants for different manufacturing purposes ; or to such a mixed husbandry as may be suggested by the particular locality.

The use of capital in agriculture ; the mode of letting farms ; cash rents ; rents in kind ; rents in service ; laws regulating the rights and obligations of real estate ; the conveyance of real estate ; with the various forms of culture in large or in small possessions, or on farms of a medium size.

The above is an imperfect and abridged statement of the subject matters of instruction and study at this institution, which may be considered as a model establishment ; and a thorough education in the various branches referred to, must be, to any young man, an important and invaluable acquisition.

The question comes up, Will such an education make men better farmers ? It must be their own fault if it does not. There may be some branches of the prescribed course, which may not appear to have a direct practical bearing ; but there is not one without its use ; if not directly, yet indirectly subservient to agricultural improvement ; and if not immediately applicable to practice, yet intimately connected with the agricultural profession, adapted to increase its power, utility, and dignity, to elevate and adorn it.

President Hitchcock, of Amherst College, in a Report to the Legislature of Massachusetts on Agricultural Schools, in 1851, speaks of the above institution in commendatory terms, and of Mr. Coleman's description as sufficiently accurate of the system now pursued there.

INSTITUTE OF AGRICULTURE AND FORESTRY

AT

HOHENHEIM, NEAR STUTTGARD.

This is the most complete agricultural school in Europe, and extends its usefulness not only throughout, but beyond Wirtemberg. It was established in 1817, by the Agricultural Society of Wirtemberg, under the patronage of the king, who devoted a royal seat, with extensive buildings, to the purposes of the institution. The farm includes nearly one thousand acres, exclusively appropriated to the support of the school, or the practical instruction of the pupils. In 1820 the school of forestry was united with this, and the pupils now follow, in part, the same course.

The entire institution is divided into two departments, one of which is intended to give a higher general and practical education than the other. In the higher, the object is less the acquisition of manual dexterity in the operations of agriculture, than the knowledge required to superintend them; while in the lower, the practice is the principal end. The latter department ranks with the rural schools of Switzerland and the agricultural school of Templemoyle, in Ireland, hereafter described. In the higher school, all the pupils are expected to pay for their education. In the lower, natives of Wirtemberg are admitted gratis, if their circumstances require it. Foreigners may be admitted to either; their payments being, however, on a much higher scale than those of natives.*

The direction of the establishment is delegated by the Agricultural Society to a director and treasurer, the former of whom has the general superintendence of all the concerns of the institution, while the latter is responsible for its financial state to the society and to the royal exchequer. The director is also an instructor. There are, besides, four regular or ordinary professors, and four extraordinary professors, besides an overseer and steward, for the management of the farm and domestic economy. The treasurer has a book-keeper and an assistant in his department.

Pupils are admitted at seventeen years of age, and are expected to possess elementary attainments necessary to the prosecution of the courses of the school. Between 1820 and 1836, one hundred and eighty natives and one hundred and eighty-two foreigners have been educated in agriculture, and one hundred and forty-seven natives and one hundred and seventy-seven foreigners in forestry, making a total of five hundred and thirty-nine in the institution. The number of pupils in the higher school in 1836 was seventy-two. That in the lower school is limited to twenty-seven.

The pupils of the *lower school*, in general, come under obligations to remain three years at the institution, in consideration of which their payments for instruction are diminished, in part, in the second year, and cease in the third. They are engaged in the operations of the farm, the garden, and other parts of the establishment, which will hereafter be enumerated, under the direction of the workmen, and under the superintendence of the steward, their time being so distributed that they may acquire practice in the various operations of farming. They are also required to attend certain of the lectures given to the higher classes, and receive instruction at times when they are not engaged in agricultural labor. They receive regular wages for work done, for which they are expected to pay for their maintenance and clothing. Premiums are given to those who display great skill and industry. While in the house, the younger pupils are under the

* For the yearly courses at the higher school natives pay forty dollars, and foreigners one hundred and twenty dollars. For instruction in forestry only, a native pays twenty-four dollars, and a stranger seventy-two dollars. For the three years' instruction in the lower school, natives pay forty dollars.

charge of the elder ones, and are under the general superintendence of the overseer. The same superintendence exists in the refectory and dormitories. It sub-serves the double purpose of economy, and of training the elder pupils in the management of men, which is one object of their education. The institution undertakes to find places for those pupils who have given satisfaction while in the school, on their completing its course.

The agricultural course of the *higher school* may be accomplished in one year, if the preliminary studies of the pupil have been directed with a view to his entering, but in general it requires two years. The same period of two years is required for that of forestry. Each scholastic year has two sessions, the one from the first of November to Palm-Sunday, and the other from two weeks after Palm-Sunday to the first of October. The intermediate periods are vacations.

The branches of special theoretical instruction are as follows:

First: Agriculture. General principles of farming and horticulture, including the culture of the vine. The breeding of cattle. Growing of wool. Raising of horses. Rearing of silk-worms. Arrangement and direction of farms. Estimation of the value of farms. Book-keeping.

Second: Forestry. Encyclopedia of Forestry. Botany of forests. Culture and superintendence of forests. Guard of forests. Hunting. Taxation. Uses of forests. Technology. Laws and regulations, accounts, and technical correspondence relating to forests.

Third: Accessory branches. Veterinary art. Agriculture technology, especially the manufacture of beet sugar, brewing, vinegar making, and distilling. The construction of roads and hydraulic works.

Besides these special branches, the following general courses are pursued:

First: The Natural Sciences. Geology. Physiology of plants. Botany, as applied to agriculture and forestry. Natural history of animals beneficial or noxious to plants and trees. General chemistry, and its applications to agriculture. Physics and meteorology.

Second: Mathematics. Theoretical and practical. Geometry. Elements of trigonometry. Arithmetic. Elements of algebra.

The institution possesses the most ample means for the illustration of these courses in its farm and collections. The farm is divided into arable land, about five hundred and one acres; meadow land, two hundred and forty-two acres; fields set apart for experiments, thirty-three acres; woodland, thirteen acres; nursery, sixty-seven acres; plantation of hops, two acres; botanical garden, fourteen acres; ground for exercising the pupils in ploughing, two acres; garden, one acre; the remainder eighty-five acres. Total, nine hundred and sixty acres. The arable land is cultivated according to five different rotations of crops, that the pupils may have specimens of the varieties of system. The botanical garden, nursery, and experimental farm, are prominent parts of the establishment. There is a large stock of cattle of different kinds, foreign and domestic, and of sheep, that the pupils may acquire practical knowledge of the relative advantages of different breeds, the mode of taking care of the stock generally, and of rearing them for different purposes. Horses are kept for a riding-school, as well as for the purposes of the farm. The institution has a large collection of agricultural implements in use in Württemberg, and of models of the varieties of foreign and new implements. These are made in a workshop attached to the school, and afford practice in the manufacture to the pupils, as well as instruction by their use or inspection, with the explanations of the professors. The sale of these implements and models also contributes to the support of the establishment. There are two collections of seeds and grain—one as specimens for illustrating the lectures, the other in quantities for sale. The pupils learn the mode of preserving them, and useful seeds are distributed through the country. There is a collection of soils of all kinds for the lecturers on terra-culture and the analysis of soils, with specimens of the means of amelioration used in different cases. The collections of natural history, though small, are interesting, from the precise adaptation of the specimens to the objects of the school. They consist of birds, beasts, and insects, and of plants, woods, and rocks. The woods are arranged in the form of a library, the separate specimens having the forms of books given to them, and being covered in part with the bark. The name is inscribed upon the back. Cross and longitudinal sections are usually found in the same book, forming the covers. Between the covers is a box containing the seeds and flowers of the tree, the parasites, &c., and a description. There is a small collection of physi-

cal apparatus, a library, and a laboratory. The following farming and technological establishments are connected with the school, and worked by the pupils, under the charge of the teachers: namely, a cider-press and appurtenances; a beet-sugar manufactory, a brewery, a distillery, and a vinegar manufactory. Though I saw better individual collections than these, the whole suite stands unrivaled, as far as my examination extended.

Examination takes place every year, which are obligatory upon those forestry pupils who intend to enter the service of the government; strangers are not required to be examined. Persons wishing to learn the details of the institution, may be received as visitors for a period not exceeding a month, living with the pupils.

Each pupil in the higher school has his own sleeping-room; or, at most, two room together. They bring their supplies of clothing, &c., at entrance. The rooms are kept in order by the servants, who receive a small compensation from the pupil. They take their dinner and supper in a common hall, and order what they please for breakfast from the steward's assistant.* This institution has supported itself for several years, which is readily to be understood from the scale of its farming operations. The success of the farm does not depend exclusively upon the productive manual labor of the pupils. It is analogous to the support of a family on a large estate, the members of the family aiding in the work, and contributing also in money to their own support, but the working of the farm not depending entirely upon their manual exertions.

* The dinner and supper cost four dollars a month, which is paid in advance to the steward.

AGRICULTURAL EDUCATION

IN

IRELAND.

ARRANGEMENTS are now made for a systematic course of instruction in the science and practice of agriculture in Ireland, in connection with the Queen's Colleges, and the Commissioners of National Education.

PROFESSORSHIP OF AGRICULTURE IN THE QUEEN'S COLLEGES.

In each of the Queen's Colleges there is a professorship of agriculture, with a model and experimental farm, and botanical garden, all the helps and appliances of agricultural books and periodicals, and a laboratory for experiments in the scientific principles connected with this department.

The colleges are situated in different sections of Ireland, viz.: at Galway, Cork, and Belfast, and the course of agricultural instruction in each, will be modified to some extent by the peculiarities of the country in which it is located.

The course of study and of lectures extends through two years, when the student receives a "Diploma of Agriculture." The courses of lectures embrace, in the first year, natural philosophy, chemistry, natural history, and the theory of agriculture; in the second year, geology and mineralogy, history and diseases of farm animals, land surveying and the practice of agriculture.

On the model and experimental farm, and in the botanical gardens adjoining the colleges, and in connection with them, the students have an opportunity of becoming acquainted with the best kind of farm animals and machines, and with the manual and mechanical operations of practical agriculture, horticulture and arboriculture, being accompanied in their visits to see such objects and processes, by their instructors, as well as in various excursions of natural history.

Students who attend the agricultural lectures may be matriculated or non-matriculated. The former pay \$33 each year to the college; the latter pay \$9 for attendance upon any separate course of lectures. They also pay \$3 annually for access to the library, which is well furnished with agricultural publications, to which the matriculated students have access without charge.

In each of these colleges are four scholarships of Agriculture, of the value of \$97, two for each year. Candidates for these undergo certain examinations. For the first year, they must have passed the matriculation examination, viz.: in English grammar and composition, the first four rules of arithmetic, vulgar and decimal fractions, involution and evolution, proportion and simple interest, mensuration, book-keeping, and

outlines of modern geography. For the second year, the examinations are in the general principles of heat, chemistry, mechanics and hydrostatics, elements of botany and zoology, theory and composition of manures, and feeding of farm animals.

Candidates for the diplomas of agriculture pay to the college the first year, \$33; for the second, \$31. If they have scholarships, they pay only \$20 the first year, and \$18 the second.

AGRICULTURAL DEPARTMENT OF THE SYSTEM OF NATIONAL EDUCATION.

The operations of the Commissioners of National Education embrace:

1. Model Farm at Glasnevin, near Dublin.
2. Model Agricultural Schools under the exclusive management of the Commissioners.
3. Model Agricultural Schools under the management of Local Patrons.
4. Agricultural Departments in Workhouse Schools.

The working operations of several schools, and the results of the experimental model farming in connection with each, are fully set forth each year in the report of the Inspector—who in 1852 was Dr. Kirkpatrick. From his report for 1851, it appears that, besides the Model Farm and Agricultural School at Glasnevin, there were 28 Model Agricultural Schools and 37 ordinary Agricultural Schools. In these schools there were 96 boarders, and 173 pupils working on the farms, and paid out of the produce of the farms—most of whom were destined to be teachers in National Schools. The Inspector in his Report remarks:

The reports of the conductors of the several Agricultural Schools in which Industrial Classes have as yet been established are most favorable as to the utility and efficiency of such classes, and generally speak of the pupils composing them as being the most regular in their attendance at school, and the most proficient in literary and agricultural knowledge. The establishment of an Industrial Class of six pupils in every Agricultural School would be of great advantage in carrying out the different operations of the farm, and in diffusing more effectually the benefits of the agricultural department of the school. The labor of such a class for two hours each day on the farm, in performing the light work, (which can be more conveniently and economically done by boys than by men,) would be worth at least £8 per annum. Now assuming that of the 4,704 National Schools at present in operation 2,000 are favorably circumstanced for having small school farms attached to them, which might be principally cultivated by such classes, a sum of £16,000 would be annually added to the national wealth. This would be an immediate and tangible benefit, but who can estimate the value and importance of the thrifty and industrious habits of which the foundation might thus be laid among the future producers of the wealth of the country. A boy might thus, without any impediment to his literary education, earn nearly 30s. a year, and if his parents could afford to invest this in the purchase of a pig, a lamb, or a calf, which might be reared for his benefit, he paying for its maintenance with his future earnings—selling it at the proper time—investing the proceeds in additional young stock, and thus from year to year gradually adding to his little property, what a valuable step this would be towards improving the provident habits of the humbler classes! What an improvement on the old and still too general practice of allowing young lads, whose laboring in this way would be so useful, to spend the greater part of their time before and after school hours in idleness or mischief.

I think from the experience we now have had of the working of the system of agricultural education in this country, the practicability of combining agricultural with literary instruction in all schools favorably circumstanced for practically ex-

emphasizing the agricultural principles to be inculcated, can not be any longer questioned. From all the information I could acquire on this subject in the course of my personal inspection, and from the statements of the local parties connected with the different Agricultural Schools, I find that in almost every instance the agricultural instruction does not in any way retard the progress of the pupils in literary studies. I have heretofore had occasion to refer to the case of the Larne School, as affording a gratifying instance of the truth of this statement; and I have again the satisfaction of stating that its pupils have a second time given public, and I trust *satisfactory* proof that at the same time they have acquired a thorough and useful knowledge of agricultural principles, they have made as much proficiency in literary instruction as if it formed the sole subject of their studies. Three of them were examined at Edinburgh, in September last, before the education committee of the General Assembly of the Church of Scotland, and several noblemen and gentlemen interested in the agricultural education of the youth of that country, on a similar plan to that carried out in connection with the National Schools here; and from the public and private accounts I have received of their answering, I think they amply fulfilled the object of their mission by affording a convincing proof of the practicability of combining agricultural and literary education in common schools, where the Teachers are properly qualified to communicate such, and to superintend the practical operations of a small farm.

I beg to direct attention to a portion of the speech delivered by Sir John McNeill, G.C.B., who presided as chairman at a public breakfast given to Mr. Donaghy by the friends of agricultural education, at the conclusion of his lectures on that subject. After referring to the necessity for and advantages of agricultural education, and the most suitable means of having it generally carried out, he thus proceeds:—"I have had occasion to visit the school conducted by your guest, Mr. Donaghy, at Glasnevin, in the vicinity of Dublin, and from the results of the experiments made in that institution, I should look with the greatest hope and confidence to the success of any scheme that might conciliate public support to enable it to be permanent. On looking to the schemes of improvement which are started every day, I think I see a disposition on the part of those who move them to look for too speedy results of their own labor. Now I am perfectly satisfied that if we are to move in this matter with the prospect of conferring benefit on the country, we must be contented to sow that others may reap. All education, mind you, is founded on that principle. He who establishes a school for the education of youth does not expect to see all those children, men, and women grown up. He does not expect to live to see the fruits of the labor that he has bestowed on them—or in many cases at least he can not expect it. He is satisfied to instill into the minds of youth those principles which are to guide their conduct in the manhood he will never see. If, therefore, we are to move in this matter let us not deceive ourselves. We, at least such of us as have the snows of many winters on our heads, are not to suppose that we are to see the result of our labors. We must be contented, if we are to do good, to drop into the ground an acorn, which may, at a distant period, produce a tree, under whose boughs many may hereafter find shelter and shade. If in this spirit you are prepared to move in this matter—if, without attempting to hold out the prospects of immediate results, you are prepared to establish a national institution, which shall grow with the growth, and strengthen with the strength, of the nation, I am prepared to go along with you in the amount of any influence or means which I possess. But if you are merely going to move for the sake of producing *immediate* effects—if you expect to see the result of your own labors—if you are not prepared to take any measures of which you may not see the result, I look for no advantage from your labors." Dr. Anderson, the distinguished chemist to the highland and agricultural society of Scotland, being called upon to express his views on the matter, said—"He had felt, ever since he had come into connection with the agriculturists of Scotland, that it was essential they should have some means of establishing a thorough and effectual agricultural education. He had thought of various plans, and had seen the great difficulty of making a commencement; but the plan they were now met to-day to discuss was a most important and practical one; as he believed the parish schools did afford them the means of carrying on this branch of education to a considerable extent. He confessed that, for his own part, he would like to see the system carried out

even more extensively than had been suggested at this meeting; and that a thorough system should be introduced over the whole of Scotland. They could not have a better educated class, as regarded general knowledge, than the agricultural classes of Scotland: but, as yet, they had no means of supplying them with that *professional* education which the present state of agriculture, and the rapid advances now making in it, rendered it necessary to possess." These remarks clearly and happily express the views that must be entertained by intelligent practical minds as to the beneficial results of a system of education such as that administered by the agricultural schools, and are admirably calculated to meet the objections of those, who, because they can not see immediate and general improvement resulting from the operations of the agricultural schools, pronounce the system a failure. Improvement can not in this instance tread on the heels of education—the latter sows the seed of which the former will in due time be the fruit; and as in ordinary cultivation some crops take only a short time to arrive at maturity, while others require a long period to attain perfection, so from the cultivation of the minds of our young farmers and laborers many beneficial results are *already* observable, but the general harvest of improvement will be slow in coming round.

The conduct and efficiency of the agricultural teachers during the past year have been in general most exemplary and satisfactory. I am enabled to speak thus favorably, not only from my own experience acquired at my different visits, but from the accounts I have received from proprietors and others who feel an interest in, and have closely watched their proceedings. They do not confine their labors to the superintendence of their schools and farms, but not unfrequently discharge the duties of "Practical Instructors" in their respective localities.

The results, in the shape of pecuniary profit, realized at the different school farms, as shown in the Appendix to this Report, differ materially; but it must not be supposed that such results are an index to the efficiency or non-efficiency of the teachers. Various circumstances besides the industry and ability of the agriculturist, will combine to affect the result of his labors, and unless where the cases are equal in respect to advantages and disadvantages, the pecuniary result of the year's operations does not afford a sure criterion whereby to judge of the merits or demerits of the system by which they were produced, although they can be useful in many other ways, such as showing the results obtained in different localities, and under different systems of management, and by comparing the results of any year with those of the preceding, the progress or retrogression in *individual* cases may be ascertained. It may be observed, and perhaps unfavorably commented on by those unacquainted with all the circumstances, that in some of the schools, especially those under the immediate management of the Commissioners, there has been a *loss* in the agricultural department; but it must be borne in mind that most of these schools are but very recently established—that in almost every case the farms connected with them were in a most wretchedly exhausted condition—that most of the energies of the agriculturists are directed to the effecting of the preliminary and indispensable improvements, and to bringing them under suitable and regular rotations of cropping; and until these preliminary measures are completed, and the farms in working order, it would be unreasonable to expect profitable pecuniary results.

The following extract, taken from a recently published and highly interesting pamphlet, bears so strikingly and prominently on this peculiar point, that I can not refrain from giving it insertion here:—"When any one acquainted with the multifarious risks which surround the farming business, takes a lease of land, he does not look for profit for several years, unless it happens to have been previously put in good condition; on the contrary, he calculates on having a heavy expenditure and little income for a considerable time. When a farm has for a number of years been starved and badly managed, to look at it, the theorist might conclude that it would not take much to put it in the same state as those richly cultivated fields adjoining. But than this there is not a more common mistake; and when landlords are of opinion that farmers can give as much rent for a wasted farm, as they may seem inclined to offer for another, which perchance is in better condition, they are not looking at the matter in a proper light. In many cases, to put the individual who has become tenant of a 'run-out' farm in an equal position with his more fortunate neighbor, who has got land exactly of a similar nature, at a rent nothing

higher, but which happens to be less severely scourged, several hundred pounds would be required; for, in improving an impoverished farm, large sums of money will be expended without making any striking change in its appearance, or without immediately yielding a profit to the improver.—*Morton's Rich Farming.*

MODEL FARM AND AGRICULTURAL SCHOOL AT GLASNEVIN.

The Agricultural Department of the Commissioners of National Education at Glasnevin, consists of a Model Farm of 128 acres, with appropriate buildings, a Model Kitchen Garden, and Nursery of fruit and forest trees, shrubs, &c., and an Industrial School. The pupils are selected by the Commissioners from the most talented and deserving young men in the various agricultural schools in different parts of Ireland; and the number for the present is limited to fifty.

The success of this great establishment in gradually diffusing over Ireland a knowledge of better methods of farming and gardening, is fully attested in the extracts which follow.

President Hitchcock in a "Report concerning an Agricultural School" to the Legislature of Massachusetts, remarks:

"This institution was established in 1838, and its grand object is to train up teachers for other schools, several hundreds of whom have already been sent out, and are spreading the knowledge here gained in other parts of Ireland. The present number of pupils is about fifty; but buildings are now in course of erection for one hundred. The pupils receive literary as well as agricultural instruction. The principal lectures are on practical as well as theoretic agriculture. The mornings as well as the evenings are devoted to study, but a large part of the day to labor. Most of the pupils, I should think, are above twenty years of age. It was vacation when I visited, yet some thirty or forty had remained to work on the farm, and I very thankfully accepted an invitation to listen to an examination of the young men in the studies they had been taught. More than twenty cheerfully came in from the field, and without changing their dress, passed a very creditable examination upon the various principles of practical and theoretical agriculture, in connection with its associated sciences. I am sure that they can not carry abroad such principles as they here presented without doing immense benefit to impoverished Ireland.

On the farm the principles taught in the school are practically illustrated. I walked over the fields, and have never, in any country, seen crops as fine, taken as a whole, of wheat, oats, beans, flax, and potatoes. The oats would probably yield eighty bushels to the acre, and the potatoes bid fair to produce seven hundred bushels, the disease having not then shown itself. The pupils have access to a good agricultural library, but I saw no collections in Natural History, nor in any other department, indeed. The place, however, being only three miles from Dublin, the pupils can resort thither for instruction in Natural History, and the inspection of specimens. There is a museum of economic geology there, which will, ere long, afford great facilities to pupils. If they can succeed in extending the skill and productiveness exhibited in this Model Farm, throughout Ireland, I am confident we should hear no more of her population as starving."

Mr. Donaghy, in his Report on the Glasnevin Farm in 1852, makes the following judicious remarks on the educational workings of this establishment.

So far as the numbers in attendance at the establishment may be considered as indicative of its continued prosperity, nothing, under the circumstances, can be more satisfactory; and coupling with this the very favorable testimony left on record regarding it by the numerous visitors who have inspected its operations throughout the year, we have every reason to be satisfied that its usefulness is becoming gradually more developed, and its agency, in effecting an improvement

in our present agricultural management, better appreciated by all who take an interest in the real welfare of the country.

Viewing the establishment, then, as an engine whereby extensive knowledge on improved agricultural practice is organized and disseminated throughout the different parts of the country—more particularly amongst those classes of the community whose circumstances debar them from acquiring such information otherwise—it recommends itself to the countenance and support of every true friend of Ireland, as an institution by means of which the amelioration of the different classes of the people, who come within the sphere of its influence, can be, so far as other external circumstances permit, ultimately effected. This it is capable of accomplishing, and that, too, “without money and without price,” on the part, at least, of the recipients of its benefits.

I need scarcely say that it would afford me, as I doubt not it would you, much gratification were I able to state that the Glasnevin Model Farm establishment is a self-supporting institution. But this it neither is, nor can be, under existing circumstances. And it is very problematical, indeed, whether or not, if it were such, it would be capable of accomplishing even a tithe of the good which it is at present effecting. Common sense will point out to any man fit to exercise a sound judgment, that no agricultural educational establishment in the world, having a *limited* quantity of land attached to it, would be able, from the sale of its produce, to board, lodge, educate, wash for, pay the traveling expenses of, afford 1s. 6d. per week, to an *indefinite* number of *free* pupils, and, at the same time, return a profit to the manager. In any self-supporting institution, a certain ratio must exist between the number of pupils boarded *free* of expense, and the extent and quality of the land cultivated; else no result in the shape of a *money* profit can be realized, as may easily be perceived by conceiving that there may be a larger number of pupils in attendance—as in our own case—than the entire produce of the farm would be capable of maintaining. But though a *money* profit is desirable, if it can at all be produced, I would ask, is a *money* profit, in reference to the affairs of an institution such as this, the proper test whereby to judge of its utility and efficiency? Most decidedly it is not. *The amount of good* effected by the operations of a public institution, constitutes, for the most part, the sole and only element of profit derivable from the expenditure attendant upon its management. Does the state expect a direct *money* profit from the expenditure of the funds set apart for the support of the Queen's Colleges? No; but from the application of those funds a more important result is expected—the education of all who can conscientiously avail themselves of the privileges thus afforded to them. Further, do the Commissioners of education contemplate that a *money* profit should emanate from the outlay consequent upon the efficient working of the Marlborough street schools? No; the object in view in this, as in the other case, is identically the same—the conferring of a great boon upon the lower ranks of the people, in the form of a good, useful, and liberal education. Well, in what does the Glasnevin Model Farm establishment differ from the cases just adduced? Is it not also an educational establishment, giving valuable gratuitous instruction to the sons of the small farmers, not only in the science and practice of husbandry, but also in general literary knowledge—matters of vital importance to the country, and of course attended with extra expense as compared with an ordinary agricultural establishment? The objects in view in each case, therefore, are precisely similar—the affording of extensive gratuitous advantages to promote the educational and social interests of Ireland out of the funds of the State—objects which the Glasnevin Model Farm establishment have promoted, is promoting, and, I should hope, will promote. A *money* profit therefore, is not the proper criterion whereby to judge of its usefulness. If so, such should also be the case in reference to the others.

But whilst the Glasnevin Model Farm establishment, with its 128 acres attached, is admirably calculated, from its proximity to the city of Dublin, for affording to the Commissioners of education the greatest possible facility for carrying out their views extensively, as regards the dissemination of agricultural knowledge, the high rent which they have been obliged to pay for the land (£5 per statute acre for one part of it, and 4 guineas per acre for the other,) in consequence, amongst other matters, of the enjoyment of this advantage; the outlay for permanent improvements required to be effected; the high charge for implements and repairs in the

locality; the amount of outlay for toll, cess, and other taxes; and the cost attendant upon the purchase and keeping in proper repair the different sets of implements for so many pupils, place it almost beyond the power of human exertion, under existing prices, to show a favorable balance sheet.

But is the fact to be altogether overlooked in forming an estimate of the results of the working of this establishment, that the Commissioners of education are able from their arrangements, as regards the locality of the farm, not only to train a class of agricultural pupils—at present 50—immediately upon it, but also to take advantage of the services of their agriculturist in delivering two courses of agricultural lectures in the year to about 200 of their schoolmasters when they are in training at their Model Schools in Dublin? And still further to enhance the value of the information which these men thus receive in the lecture-room, they are called upon by the board to visit the Model Farm once in the week, where an explanation is given to them of the courses of cropping followed, the mode of performing the different farming operations, and, in short, of the entire management pursued. Could these advantages be obtained if their principal agricultural department was situated at a considerable distance from their literary training department, without incurring much more trouble and expenditure than at present? The truth is, by this very arrangement—the proximity of the agricultural establishment to the literary training department—the Commissioners of education have been able to take the lead of all the educational institutions in Great Britain as regards the dissemination of agricultural information. Why has Scotland been heretofore unable to carry out agricultural education in connection with her present existing school system, notwithstanding an expressed desire on the part of some of her most enlightened men to effect this object? Simply, because she has no central agricultural training department in connection with one or other of her normal seminaries, at which her teachers could acquire, in addition to their other branches of education, a knowledge of agricultural science and practice. I would respectfully submit, therefore, that in forming an estimate of our transactions, throughout the year, the real and substantial advantages derived by the country from the working of the establishment should receive due consideration.

The following notice of the Model Farm at Glasnevin, where the Normal pupils are required to take practical lessons in agriculture, is taken from Colman's "*European Agriculture and Rural Economy*."

"It is considered (by the Commissioners of National Education) and with good reason, that the great want, among the people, is a want of knowledge in applying and using the means of subsistence within their reach; that there is no indisposition on their part to labor; that there is as yet an ample extent of uncultivated land capable of being redeemed and rendered productive; and that a principal source of the wretchedness, and want, and starvation, which prevail in some parts of this country, often to a fearful extent, is attributable to the gross ignorance of the laboring classes of the best modes of agriculture and of rural economy. With this conviction upon their minds, the commissioners have determined to connect with all their rural schools a course of teaching in scientific and practical agriculture, communicating a knowledge of the simple elements of agricultural chemistry; of the best modes and operations of husbandry which have been adopted in any country; of the nature, and character, and uses, of the vegetables and plants necessary or useful to man or beast; of the improved kinds of live stock, and of the construction and use of the most improved and most approved farming implements and machinery. With these views, it is their intention to train their schoolmasters, and to send out such men as are apt and qualified to teach these most useful branches. For this purpose the government have established this model farm, which was begun in 1838, and which has already, in a greater or less measure, qualified and sent out seven hundred teachers. To my mind it seems destined to confer the most important benefits upon Ireland, and I may add upon the world; for so it hap-

pens under the benignant arrangements of the Divine Providence, the benefits of every good measure or effort for the improvement of mankind proceed, by a sort of reduplication, to an unlimited extent; these teachers shall instruct their pupils, and these pupils become in their turn the teachers of others; and the good seed, thus sown and widely scattered, go on yielding its constantly-increasing products, to an extent which no human imagination can measure. Three thousand schoolmasters are at this moment demanded for Ireland, and the government are determined to supply them. Happy is it for a country, and honorable to human nature, when, instead of schemes of avarice, and dreams of ambition, and visions of conquest, at the dreadful expense of the comfort, and liberty, and lives, of the powerless and unprotected, the attention of those who hold the destinies of their fellow-beings in their hands is turned to their improvement, their elevation, their comfort, and their substantial welfare.

The Model Farm and Agricultural School is at a place called Glasnevin, about three miles from Dublin, on a good soil. The situation is elevated and salubrious, embracing a wide extent of prospect of sea and land, of plain and mountain, of city and country, combining the busy haunts of men, and the highest improvements of art and science, with what is most picturesque and charming in rural scenery, presenting itself in its bold mountains and deep glens, in its beautiful plantations, its cultivated fields, and its wide and glittering expanse of ocean. The scenery in the neighborhood of Dublin, with its fertile valleys, and the mountains of Wicklow, of singularly grand and beautiful formation, bounding the prospect for a considerable extent, is among the richest which the eye can take in; and at the going down of the sun in a fine summer evening, when the long ridge of the mountains seemed bordered with a fringe of golden fire, it carried my imagination back, with an emotion which those only who feel it can understand, to the most beautiful and picturesque parts of Vermont, in the neighborhood of Lake Champlain. I have a strong conviction of the powerful and beneficial influence of fine natural scenery, where there is a due measure of the endowment of ideality, upon the intellectual and moral character; and I would, if possible, surround a place of education with those objects in nature best suited to elevate and enlarge the mind, and stir the soul of man from its lowest depths. It is at the shrine of nature, in the temple pillared by the lofty mountains, and whose glowing arches are resplendent with inextinguishable fires, that the human heart is most profoundly impressed with the unutterable grandeur of the great object of worship. It is in fields radiant with their golden harvests, and every where offering, in their rich fruits and products, an unstinted compensation to human toil, and the most liberal provisions for human subsistence and comfort, and in pastures and groves animated with the expressive tokens of enjoyment, and vocal with the grateful hymns of ecstasy, among the animal creation, that man gathers up those evidences of the faithful, unceasing, and unbounded goodness of the Divine Providence, which most deeply touch, and often overwhelm the heart. The Model Farm and School, at Glasnevin, has connected with it fifty-two English acres of land, the whole of which, with the exception of an acre occupied by the farm buildings, is under cultivation, and a perfect system of rotation of crops. The master of the school pays for this land a rent of five pounds per acre, and taxes and expenses carry the rent to eight pounds per acre. Twelve poor boys, or lads, live constantly with him, for whose education and board, besides their labor, he receives eight shillings sterling per week. They work, as well as I could understand, about six hours a day, and devote the rest of the time to study, or learning. The course of studies is not extensive, but embraces the most common and useful branches of education, such as arithmetic, geography, natural philosophy, and agriculture, in all its scientific and practical details. They have an agricultural examination, or lecture, every day. I had the gratification of listening to an examination of fourteen of these young men, brought out of the field from their labor; and cheerfully admit that it was eminently successful, and in the highest degree creditable both to master and pupil. Besides these young men, who live on the farm, the young men in Dublin, at the Normal School, who are preparing themselves for teachers of the national schools, are required to attend at the farm and assist in its labors a portion of the time, that they may become thoroughly acquainted with scientific and practical agriculture in all its branches, and be able to teach it; the government being determined that it shall form an indispensable part of the school instruction through-

out the island. The great objects, then, of the establishment, are to qualify these young men for teachers by a thorough and practical education in the science, so far as it has reached that character, and in the most improved methods and operations of agriculture. Besides this, it is intended to furnish an opportunity to the sons of men of wealth, who may be placed here as pupils, to acquire a practical knowledge of, and a familiar insight into, all the details of farming. This must prove of the highest importance to them in the management of their own estates."

LIST OF LECTURES AT GLASNEVIN.

1. The rudiments of agricultural chemistry, geology, mineralogy, botany, and vegetable physiology, so far as they have a practical application to agriculture.
2. The nature and improvement of soils.
3. The nature, properties, and application of the several manures.
4. The effects of heat, light, and water on soils, manures, animal and vegetable life.
5. The nature, situation, and properties of farms in general.
6. The proper division of farms, with the crops suitable, according to soil and situation.
7. The situation and construction of farm buildings.
8. Rotations of crops, fencing and draining, according to the most approved principles.
9. The scientific principles of ploughing, and the general construction and use of farm implements.
10. The cultivation of green and grain crops, proper quantity of seeds, and best mode of culture.
11. Haymaking and harvesting.
12. Animal physiology and veterinary practice, and general management of horses.
13. Cattle, their several breeds, management, diseases, and modes of cure; also of sheep and swine.
14. Horse-feeding and fattening of cattle, with the improved modes of dairy management.
15. Practical gardening, under the direction of Mr. Campbell.

The results of this course of training with the teachers, are best seen in the following notice of the National School, at Larne,—an ordinary school in which agricultural chemistry and practical agriculture are provided for in the course of study.

"This is not, properly speaking, an agricultural school, but a national school, where the common branches of education are taught; and there is connected with it a department or class of agricultural study, and a small piece of land, which the boys cultivate, and on which, in the way of experiment, the principles of agriculture, and its general practice, are, within a very limited extent, illustrated and tested. The examination was eminently successful, and creditable alike to the teacher and the pupils. It was from this establishment that a detachment of five pupils was sent for examination to the great meeting of the Agricultural Society of Scotland the last autumn, where their attainments created a great sensation, and produced an impression, on the subject of the importance of agricultural education, which is likely to lead to the adoption of some universal system on the subject.

I shall transcribe the account given of the occasion: 'Five boys from the school at Larne were introduced to the meeting, headed by their teacher. They seemed to belong to the better class of peasantry, being clad in homely garbs; and they appeared to be from twelve to fifteen years of age. They were examined, in the first instance, by the inspector of schools, in grammar, geography, and arithmetic; and scarcely a single question did they fail to answer correctly. They were then examined, by an agricultural professor, in the scientific branches, and by two practical farmers in the practical departments of agriculture. Their acquaintance with these was alike delightful and astonishing. They detailed the chemical constitution of the soil and the effect of manures,

the land best fitted for green crops, the different kinds of grain, the dairy, and the system of rotation of crops. Many of these answers required considerable exercise of reflection; and as previous concert between themselves and the gentlemen who examined them was out of the question, their acquirements seemed to take the meeting by surprise; at the same time they afforded it the utmost satisfaction, as evincing how much could be done by a proper system of training.

I confess the establishment at Larne afforded me, in this respect, very high gratification. The agricultural studies are not made compulsory, but voluntary; and one hour per day is devoted to agricultural labor. The Board of Education in Ireland have now under their control three thousand teachers; and it is proposed, wherever it may be deemed useful, to make agriculture a standard branch of common school education. They already have seven agricultural training establishments; and it is in contemplation to have twenty-five, with which it is proposed shall be connected small model farms, so that every where, besides furnishing this most valuable instruction to the pupils of the schools, the farmers in the vicinity may be excited and instructed to improve their cultivation. Thus diffusive is the nature of all beneficence. A good deed, like a stone thrown into the water, is sure to agitate the whole mass. Its strongest effects will be felt where the blow is given; but the concentric circles are seen extending themselves on every side, and reach much farther than the eye can follow them. In the moral as well as physical world, the condition of mutual attraction and dependence is universal and indissoluble. We have reason to hope that no good seed is ever sown in vain, but will sooner or later germinate and yield its proper fruits.

These establishments do certainly the highest honor and credit to the intelligence and philanthropy of Ireland, and their beneficent effects must presently be seen in alleviating the indescribable amount of wretchedness under which this beautiful country and fine-spirited people have been so long crushed to the earth—a wretchedness which, to be understood, must be seen."

President Hitchcock, of Amherst in his Report to the Legislature of Massachusetts, in 1851, on Agricultural Schools, thus notices his visit to the National Agricultural School at Larne.

The farm consists of only seven acres. Yet in 1848, the head master, Mr. M'Donnell, maintained on this small plot of ground, in the very best condition, three milch cows, two calves, four pigs, and one donkey, and raised besides 32½ cwt. of wheat, 28 cwt. of oats, and 24 cwt. of potatoes. The crops growing this year, appeared unusually fine.

The in-door pupils pay \$54 a year, including instruction and board, or if upon scholarships, only \$22. The out-door pupils pay for instruction, \$17 annually. The boarders work on the farm from 6 to 8, and from 10 to 12 A. M., and from 4 to 6 P. M. From 12 to 3 o'clock daily they study in the school-room, in agriculture as a science as well as in literature; also, from 6 to 8 P. M., in an evening class under the superintendence of a teacher. They are not admitted under fifteen years of age, nor without a certificate of moral character. The course is of two or three years' duration, according to the age and acquirements of the pupils.

The agricultural instruction "embraces the principles of chemistry; the formation, nature, and difference of soils; the rotations of cropping best suited to such varieties; draining, trenching, and subsoiling, and the principles upon which their efficacy depends; house feeding of cattle, and its advantages; the constitution and properties of the different manures; the proper divisions of farms, &c., &c." To this is added a well grounded course of English education in reading, writing, arithmetic, English grammar, geography, book-keeping, mensuration, land surveying, gauging, geometry, trigonometry, algebra, and navigation.

Such arrangements are made, that each class receives religious instruction from clergymen selected by the parents or guardians. If the teacher of the school wishes to communicate religious instruction, he gives public notice of the time and place, and the pupils can attend or not, according to the wishes of their parents, or their own.

DUNMANWAY MODEL AGRICULTURAL SCHOOL.

The Dunmanway Model Farm is situated in the county of Cork, and consists of twelve acres. The following extracts, taken from the Third Annual Report of Frederic W. Connor, head master of the school, shows its condition in 1852.

The confidence placed by the public in the institution has not diminished. It has had a great increase of visitors. In the attendance of the pupils, an increase of 70 per cent. has taken place from among the various classes of society; a greater number are still anxious to be admitted, but accommodation can not be found for their instruction.

Agricultural Instruction, both of a scientific and practical nature, has been imparted regularly to the pupils during the past year, on the days appointed for giving such. There are very few subjects bearing upon agricultural economy, that have not been brought before their notice. Agricultural instruction is given in the morning, from a quarter past six to half-past eight o'clock; in the evening from nine to half-past nine; and every second week-day from half-past two till a quarter past three, P. M., or an average three hours daily. Information is communicated by lectures, and the study of approved works on agriculture and manuscripts prepared by myself accompanied in every case by searching examinations. The mode of instruction adopted has proved most satisfactory. The pupils take notes during the reading of the lecture; these they immediately transcribe while the subject is yet fresh in the memory. Then subsequently exchange their manuscripts, mutually correcting each other's errors, (including those in spelling and composition,) after which I examine and classify their papers. Thus literary and agricultural instruction go hand in hand, and the agreeableness of the method forms no ordinary incentive to improvement. After my own examination of the class, which alternates with every lecture, I permit each pupil in his turn to examine the class also; at other times to read a lecture of his own composition. Again, I submit to the pupils a series of questions to be answered by them on paper—cause them monthly to write out essays on a given subject—and weekly discuss agricultural questions. As a proof of the interest evinced by them in the prosecution of their studies, I may be permitted to state, that many of them rose at three o'clock in the morning, during the summer, for the purpose of studying the subject of their lesson for that day.

The Agricultural Boarders' Class consists of four pupils, one of whom, being a free pupil, is supported gratuitously by the board. The want of accommodation prevents a greater number being admitted. The class continues to give every satisfaction. Since it was established five young men have been advanced from it to the Glasnevin Model Farm. The selection of members for this class is generally confined to the neighboring farmers' sons—the preference being given to those previously educated at a normal school.

The Pupil-Teachers' Class continues to work well.

The Industrial Class, the members of which are selected from the agricultural class, affords great satisfaction by the order and good conduct of its members, and the efficient manner in which they perform their duties.

The Agricultural Class consists on an average of 37 pupils, the highest number we can conveniently find room for. The pupils composing this class are selected from the advanced classes of the school, who in conjunction with the agricultural boarders and pupil-teachers, receive agricultural instruction for the space of three-quarters of an hour every second week-day, and have also the privilege of attending the morning classes, where extra instruction is afforded. They are instructed in the leading principles of agricultural chemistry, geology, vegetable physiology, &c., and especially in those practical subjects bearing more directly upon their future employment. Of the 37 pupils composing the agricultural class, 30 are the sons of farmers, holding from 20 to 200 acres of land respectively.

The working pupils are required each to keep a journal of the various operations going on on the farm,—the different periods at which crops are sown and harvested,—how managed, &c,—and many other remarks that will form a source of reliable information in after-life. Meteorological observations are also noted

down. They also take part in the preparation of the ground for the crops ; assist in the sowing, reaping, &c., of all crops ; in short, no operation is performed in which their assistance and attention is not so employed as to initiate them into a knowledge of those business habits required to fit them for the duties of afterlife. Permission is granted the pupils to assist their parents in sowing and managing their green crops ; and, in inquiring of their parents as to the assistance they receive from the instruction of their children educated at this school, I was happy to find they are in the constant habit of exposing the errors of their fathers' and neighbors' husbandry, and contrasting the system pursued by them with that carried out on the Model Farm.

Since the institution of the agricultural class, 12 young men have been appointed out of it as Teachers of National Schools, and eight are giving assistance on their fathers' farms.

These young men may be looked upon as so many *practical instructors*, who, feeling a zealous interest in the objects of their professions, will, in their intercourse with the neighboring farmers, be the means of materially improving the intelligence and industry of the district.

WORKHOUSE AGRICULTURAL SCHOOLS.

One of the most interesting features of the present educational movement, both in England and Ireland, is the successful introduction of industrial training for pauper children into workhouses. There were seventeen workhouse schools in Ireland to which agricultural departments were annexed in 1852. Respecting the operation of these departments in the county of Antrim, Mr. Senior, one of the poor law commissioners, says :

"Each year shows an increased demand for the workhouse boys by the farmers ; the age, therefore, at which the boy leaves the workhouse becomes a very early one ; it probably now averages ten years. Each year also shows increased good behavior on the part of the boys, who may, perhaps, be termed apprentices."

Dr. Kirkpatrick in view of another year's experience adds : "Every year's experience convinces me more forcibly of the necessity of a general and efficient system of industrial training for pauper children, and I am happy to find that this opinion is steadily gaining ground both here and in the sister country. The facts previously stated bear me out in this assertion with respect to this country, and the following extracts, which I take leave to quote from a Parliamentary document, will show its progress in England, and may be useful in other respects."

Mr. Doyle, one of the poor law inspectors, in his Report, thus speaks of the progress of industrial education for pauper boys, and of the success which has attended it wherever introduced :

"The guardians of almost every union in this district in which there are upon an average a sufficient number of boys of an age capable of industrial occupation, either have already provided, or have determined to provide the means for their industrial training. The unions of this district being almost exclusively agricultural, the means of industrial training for boys consist chiefly in the cultivation of a few acres of land by spade husbandry. In those unions in which this system can be said to be fairly in operation, it has already been productive of much benefit, and it will be seen by the detailed accounts furnished from some of them that this mode of educating the children in habits of industry is attended with considerable profit to the guardians."

The master of the Wrexham union workhouse, in a communication addressed by him to Mr. Doyle, after describing the lamentable state of things that existed among the youthful inmates previous to the adoption of a system of industrial training, thus proceeds :

"It is these, and such like facts, which have impelled this board of guardians

to adopt some plan, if possible, to put a stop to these evils; and hence, in 1848 an acre of potato land was taken as a trial, to be cultivated chiefly by the boys. The success of the experiment was so satisfactory that the board was induced to rent, as a permanent appendage to the workhouse, a field of four acres, in which the schoolmaster in the afternoon of each working day trains the boys in spade husbandry. The profits of the first two years were comparatively small, still they have enabled us to lay in a good stock of tools; and besides, when taken together with the present year's profits, have realized in whole, in form of pauper labor, nearly £90. The statement now sent shows the result of our second year's operations in our own field, and as the general intelligence as well as the muscular capacity of the children is becoming equal to their work, we may expect greater pecuniary results; but at last the moral results likely to flow from our endeavors are the most pleasing; the children are more easily managed than formerly, are more contented and generally happier, and perform their work in a pleasing and cheerful manner. They are, I trust, in connection with the inculcation of sound principles, having those principles trained into habits, which, while they will fortify against temptation, give promise of enabling the children readily to adapt themselves to the sphere in life in which their lot is likely to be cast, and of ultimately becoming wholly independent of parochial relief. I have great pleasure in being able to add, that not one boy who has gone out to service since we began these operations has been returned on our hands, or is likely to be so."

Mr. Everest, clerk of the Atcham Union, writes to Mr. Doyle as follows:

"That the children of the poor may be efficiently taught, and so far as human means may produce the object, made useful and honorable members of society in a union workhouse, is a fact that I have long had the pleasure of witnessing in the union in which I have served from its commencement, as well as in one in which I previously served in the south of England. To illustrate the subject, I will now set forth, in as condensed a form as I can, the principles and practice maintained in the union school during the fourteen years of its operation. At first the number of children was small, the guardians feeling it desirable not to crowd their workhouse until time had afforded all parties concerned in its government a little practical experience therein. A school was at once established; but as no qualified schoolmaster applied in answer to an advertisement for such an officer, the situation was taken by a person who, though deficient in mental acquirements for such an office, was a practical agriculturist, of good moral character, and entered on his duties with a determination to do all he could for the welfare of the children put under his care. The first step was that of making the school a place of moral as well as physical training, to which I attribute its great success. For this purpose every thing that transpired was, to the extent of his ability, made the subject of some practical and familiar observations, enforced by such illustrations as became weighty by example. Industry was from the first a marked characteristic of the school, to inculcate which various indoor occupations were and still are practiced, such as knitting, netting, plaiting straw, &c., by which means it became a natural habit in the children to be doing something that was useful, so that when fatigued with heavier toils the child sat down to rest, it was, I had almost said, an instinctive feeling that led him to take his straws or needles in hand, and yet the gratification afforded when he found he had enough plait for a hat, and the pleasure evinced when by himself or his companions it was so formed, proved that his mind had received a correct bias as to production by his own application, nor was there ever occasion to enforce this practice when once begun, as it became a source of pleasure to be so engaged; but whenever we found a lazy boy it became the subject of a moral lecture, and as work was and still is held to be its own reward in our school, if a boy is found idle the punishment is simple, take him away from his work to look at the others busily employed, and so severe is this in almost every case, that I have scarcely ever known a boy remain half an hour without petitioning for liberty to go to work, and I have been equally pleased to see that others, instead of making any taunting remarks, have become petitioners in behalf of their schoolfellow.

"These may appear trifling incidents, but let guardians and officers try the plan,

and watch the issue in future service, and they will find, as I have done, that they are important facts; and I notice them because for the want of seeing this important fact at the outset, that the child is to be trained to the principle of being useful, so much of the other efforts are vain. Another important point we have always aimed at has been to teach the child to do his work well, to do that work in the right way, and then to make him understand why that particular way is best, and this gives them additional interest in their work, while it tends to make them good workmen in after-life. Our chief mode of employment is on the land we cultivate by spade husbandry, a portion of which has, from the opening of the school, been cultivated exclusively by the boys."

"Having stated the nature and practice of our school for fourteen years, it only remains to speak of its success. It has been said that the tendency of workhouse schools is to make perpetual paupers, and such statements are made, no doubt, in the full belief of their truth; but I am happy to say that, so far as fourteen years may serve for the data of calculation, it is without a shadow of foundation here. Our children go to service, and I would rather refer inquirers to their employers for their characters as servants, than speak of it myself. Suffice it to say that, with a very few exceptions, (and those of characters the most vicious and thoroughly formed before they came to us,) and one or two cases of serious illness, they have not returned, except, as is frequently the case, to visit the school where they were trained in the habits of virtue and industry, and leave behind them some trifle, either in money or otherwise, to the school fund. If we trained them up as paupers, I think many of them bid fair to forget the place of their training before they return. Scarcely a child who has been taught in our school leaves it without those feelings of affection for their associates which indicate most clearly that the mind has been cultivated, and the assistance they afford in procuring situations for those they left behind proves the genuine character of their attachments; but to return to the workhouse after going to service is felt to be a disgrace, and will, I hope, as it has hitherto done, prevent such a circumstance ever occurring except in cases that are unavoidable; and in such cases I hope that a sense of rectitude and the love of virtue will seek such an asylum in preference to crime."

Mr. Farnall, another of the poor law inspectors, states:

"On reference to the tables, it will be seen that fifty acres of land, cultivated by 514 boys, have yielded in a year a net profit of £335 7s. 1d.; there is, however, a far more valuable benefit acquired than that sum of money represents, for these boys have, in the acquirement of this pecuniary profit, been under training for manual labor; have been instructed in the value of labor, and in the connection which must be maintained between labor and property; have been made acquainted, to some extent at least, with the natural world; have felt pleasure in the contemplation of their own work; and have been trained, as far as practicable, to meet the difficulties and distresses which may beset them in their way through life."

XII. PUBLIC INSTRUCTION IN BELGIUM.

HISTORICAL DEVELOPMENT.

Even as early as during the Carlovingian period, we find mention made of several flourishing schools in Belgium; as, the cloister schools of Lobbes and Gemblours; and especially those of Liege. These were destroyed by the Normans, but those at Liege became prosperous again under the episcopate of Notker, (about A. D. 971,) and remained eminent during the eleventh and twelfth centuries. Under Charlemagne, the state had immediate charge of education, but a close connection took place between church and state under his successors; and from the time of Louis the Pious, the bishops were intrusted with the legal charge of public instruction. This was at first contrary to their wishes; but the clergy kept the control of education for some centuries. Their schools were connected with the cathedrals and monasteries, (cathedral schools, cloister schools.) Besides those already named, may be mentioned those at Stavelot, St. Trond, St. Hubert, Waulfort, Brogue, and those of the abbeys of St. Laurent, and St. Jacob, in the diocese of Liege; the schools of Doornik, celebrated for the scholastic Odo, of Orleans; and in Flanders, the schools of the cloisters of St. Peter and St. Bawo, at Ghent, and the schools of Thourout and Affligem.

Between the twelfth and fifteenth centuries, new necessities introduced a new species of schools. These were the chapter schools, which were cotemporary with the emancipation of the towns. While the feudal lords were proud of their ignorance, the citizens were learning to read and write; and this new class of schools afforded the first protection to the vulgar tongue, and gave rise to other institutions, such as the "chambers of rhetoric," which promoted social culture and free thought. Down to the crusades, education was intended only to train theologians; but now, laics began to receive an education, substantially Christian, and increasingly free. The poor were taught gratis. During this period elementary schools were organized, which carried their pupils up to the beginning of Donatus,* and no further. The larger schools taught grammar, music,

* *Elius Donatus*, was an eminent rhetorician and grammarian at Rome, A. D. 354, and preceptor of St. Jerome. His grammar was the leading school-book during the middle ages, and with its fellows, the "*Doctrinale*," "*Musmastroctus*," &c., was replaced by the manuals of Melancthon and his cotemporaries. Donatus was probably printed on wooden blocks, like the "*Biblia Pauperum*," before movable types were invented. So universally was the work known, that "donat" or "donet" was a term commonly used for a preface or introduction to any thing.

and ethics, fitting their graduates to study with profit at foreign universities.

John IV., duke of Brabant, founded the great Catholic university of Louvain in 1426, which contained at one time fifty colleges, divided into five classes: theological, juridical, medical, mixed, and cloister-schools. The university of Leyden was founded in 1575, under the opposite auspices of the Dutch Protestants.

Under Maria Theresa the system of the universities and gymnasias was re-arranged, and their instruction rendered uniform, and committed mainly to the hands of the Jesuits. At the French Revolution, the university of Louvain was extinguished, and public education regulated anew, by the decree of the 8d Brumaire of the year IV. The constitution of the year VIII. having passed the subject by in silence, Chaptal was desirous of obtaining the right of free instruction; but Bonaparte would not allow it. Portalis, on the contrary, maintained that religion should be made the basis of all instruction. But this demand was not complied with in the reorganization of the school system, made out by Fourcroy, and which went into operation under a decree of May 1, 1802. This law established four classes of schools: primary, secondary, lyceums, and professional schools (*Fachschulen*.) On the whole, the French dominion gave a great impulse to instruction in Belgium.

The treaty of Paris, of March 30, 1814, fixed the boundaries of the Netherlands, and united Holland and Belgium. In these new circumstances, the system of public instruction became the subject of much difficulty between the Calvinists of the northern provinces and the Catholics of the southern. The government therefore undertook itself to manage the organization of the system of instruction in its three grades, under articles 226 and 228 of the constitution. In 1817 it organized the primary school system upon the best possible basis; a measure which forms one of the claims of King William I., to the gratitude of the friends of youth. In that year, three universities were established in the three provinces of Belgium; at Louvain, Ghent, and Liege. At the same time there were organized, independent of the communal gymnasiums, seven atheneums, or higher institutions of intermediate instruction; at Brussels, Maestricht, Bruges, Doornik, Namur, Antwerp, and Luxemburg. In these, public lectures were given, with the view of promoting good taste and enlightenment among all classes of society. Excellent lectures were also delivered for the same purpose in the literary and scientific museum at Brussels. In each of these atheneums were ten professors; and the course of study was six years in length. Industrial education was excluded in them in favor of the study of the ancient languages.

The revolution of 1830 caused a reaction against this system. This revolution in many respects resembled that which caused the downfall of Joseph II. William I. desired to free the Belgians from French influence, and with this object adopted the injudicious measure of attempting to force the Dutch language upon them. He also endeavored to

familiarize them with Protestant ideas, and to this end determined to get the care of religious instruction exclusively into the hands of the state. But the clergy were energetic in asserting their rights; the boldness of the Belgian deputies to the States-General increased daily; and the project for a system of public and private instruction which was laid before the second chamber on the 26th November, 1829, was very unfavorably received by the Catholics. The government very honorably confessed its error by repealing the obnoxious ordinances of 1825. But it was too late, and the Belgian provinces were lost to Holland. On the 12th October, 1830, the provisory government repealed all laws restricting the freedom of instruction, and the present system, in which liberty of instruction and governmental aid and supervision are recognized, commenced.

In the educational history of Belgium, the advocates of the right and duty of the State to interpose its authority to aid parents, neighborhoods, and municipal bodies in establishing schools of different grades, and subjecting them to constant, vigilant, and intelligent supervision, and thus protecting itself against incompetent teachers and the consequences of parental and municipal neglect, can find abundant, if not wholly conclusive arguments against the claims of the church on the one hand, and of the unabridged and unaided liberty of parents in the education of children on the other. Certain it is, that at no period of the history of Belgium, has education been made at once so comprehensive and universal as while under governmental organization and inspection. During the undisputed supremacy of the Catholic church—and no country in Europe has remained so firm to its traditional faith and the authority of the church of Rome—while it enjoyed the advantages which result from the doctrine and example of a learned and pious clergy; and from numerous monastic and other religious institutions—there was a large body of the people uninstructed. On the union of the territory which now constitutes the kingdom of Belgium, with Holland, under the designation of the kingdom of the Netherlands, the king undertook to extend over it the system of public education which was commenced in Holland under the auspices of the "*Society for the Public Good*" in 1784, and adopted by the government in 1806, and which had resulted in diffusing over the whole country a high degree of popular intelligence.

The new system of public schools began to operate in the Belgic provinces in 1817, when a Normal school was established at Liege, and during the twelve years from that time to 1829, the progress and quality of popular education was greater than at any former period, and greater than in the twelve years following, during which the system was broken up, and the church and the voluntary system again prevailed. The number of children who attended the elementary schools in the winter of 1817, was 152,898; and in the winter of 1828, they amounted to 247,496, being an increase of 94,589. In 1817 the salaries paid by the government to teachers in the rural communes, was 157,590 francs; in 1828, 488,150 francs, showing an increase of 330,570 francs. During this

period, 1,146 school-rooms, and 668 houses for teachers were erected, or thoroughly repaired and fitted up. Well organized schools, under competent teachers, were established in nearly every commune, and the whole were subjected to a vigilant and intelligent inspection, and improvement was rapidly and universally extending. Antiquated and awkward routine was replaced by rational and pleasing methods of teaching; uniformity of class-books was introduced; normal classes and associations of teachers were established for the professional training of all who applied to teach in the popular schools; in short, the whole plan of proceeding was regular, thorough, and responsible, through a system of inspection, examination, reports, and full publicity.

The popularity of the system of elementary schools was destroyed by the efforts of the government to control the institutions of secondary and superior education, and especially by the measures adopted to enforce a Protestant influence from Holland into institutions supported by the Catholics, who constituted a large majority of these provinces.

In 1816 the king issued a decree for the organization of the upper branches of public instruction. By this decree three universities were created—at Louvain, at Ghent, and Liege—each to possess the five faculties, of theology, jurisprudence, medicine, mathematical and physical sciences, philosophy and letters.

In 1822, an edict was published forbidding all persons to exercise the functions of schoolmaster in the higher branches of education who had not been authorized by the central board of instruction; and by a decree of 1822, this edict was extended to all associations, civil and religious, and all persons were forbidden to take vows in any religious fraternity, without permission of the government.

In 1825 all independent schools and seminaries were suppressed, and a philosophical college was established at Louvain, in which all who were destined for the ecclesiastical state were required to pass two years in study as a necessary condition for admission into any episcopal seminary.

This movement was followed by a loud demand for liberty of instruction, of the press, and of worship on the part of the Catholics, and finally a concordat was concluded with the court of Rome and the government of Holland, in virtue of which the episcopal theological seminaries were again opened, and the bishops left at liberty to provide at their own discretion for the instruction of the pupils.

In 1830 the Nassau dynasty was banished from Belgium, and a constitutional monarchy was formed, under which the equal liberty of all creeds and religious communities was guaranteed, and the entire liberty of instruction proclaimed.

The practical adoption of this principle was productive of great immediate injury to primary education. The best schools in all the large cities, which had grown up under the fostering care of the government, and the stimulus of constant and intelligent inspection, and the exclusion of incompetent teachers, were broken up, and their places supplied by a

large number of private and parochial schools, too small in the attendance of pupils to admit of a thorough system of classification as to age and proficiency, and too limited in resources to command the services of well qualified teachers. The societies of teachers and friends of education which had sprung up for the encouragement and improvement of the profession, and for the production and use of good books, were discontinued, and a period of public apathy succeeded, in which broken down tradesmen, and men who had proved their unfitness for other work requiring activity and culture of mind, found employment as teachers, and especially in schools where there was no longer any organization enforced by the local authorities as a test of qualification for the business of instruction. "In ten years," said one of the most intelligent school officers in Brussels in 1840, "education has gone back in this country one hundred years." "The contrast between Holland, as it now is, and Belgium, in educational matters, is striking," remarks an intelligent traveller in 1842. "Nothing can be more deplorable than the mockery of education, which the people in the rural districts are satisfied to let teachers, or those who profess to be teachers, practice."

So rapidly was Belgium sinking below its former position, and in the scale of European nations, in the condition of popular education, that the attention of government was arrested, and the well-directed efforts of individuals were enlisted to apply the remedy. The public mind was used by a series of popular tracts "on the condition of primary instruction and the necessity of improvement," from the pen of M. Ducpetiaux, who also published in 1838 an elaborate work on primary instruction in which the schools of Belgium were contrasted with those of Prussia, Saxony, Holland, France, and Switzerland. A course of normal instruction was provided in connection with a private seminary of M. Vandermaelen in 1839, and societies of teachers were again formed to assist in establishing a system of public schools. So thoroughly were a portion of the Catholic bishops satisfied that the contest which had arisen between the ultra liberal and the ultra church party—the one excluding all religious instruction and all clerical officials from the schools, and the other not only making religion an element in family and school education, but making every teacher an ecclesiastic, and subjecting the schools entirely to clerical inspection and control as a part of the organization of the church, was highly detrimental both to the cause of religion and education—that in 1842 they gave in their adhesion to an organic law, which, while it secures to the whole people a sound secular education, provides for religious instruction, and guarantees to the clergy a high degree of influence in the schools.

The system of public instruction in Belgium embraces,

1. Primary schools, including day schools for children of the usual school age in other countries, infant schools or asylums, and Sunday schools and evening classes for adults, whose early instruction has been neglected.

2. Superior primary or high schools in all the large towns.

3. Secondary or intermediate schools, called *atheneea*, preparatory to the university.
4. Normal schools, to qualify teachers both for elementary and secondary schools.
5. Superior schools or universities, with faculties, of theology, law, medicine, and philosophy.
6. Special schools for industrial education, and particular classes.

1. PRIMARY INSTRUCTION.

The system of primary instruction established in 1842, embraces three classes of schools—primary, superior, and normal. Every commune (the smallest territorial and civil subdivision of the State) must have at least one public elementary school, unless the instruction of all the children is provided for to the satisfaction of the government, in private endowed, or denominational schools. These schools must be free to the poor, and can be made free to all, by vote of the communal council.

The studies in the primary or elementary school, includes religion and morals, reading, writing, the scheme of weights and measures as defined by law, the elements of arithmetic, geography, and the French, German, or Flemish language, according to the locality of the school. Instruction in religion and morality is placed under the direction of ministers of the sect to which the majority of the pupils belong. Children belonging to other communions need not attend during such instruction if their parents object.

The schools are established and managed by the communal council, or administrative authorities of the villages and cities, subject to the supervision of the government, through cantonal and provincial inspectors.

An inspector is appointed by the king, through the minister of public instruction for each canton or judicial district, on the nomination of the provincial council, whose duty it is to visit at least twice in every year all the schools in the district, and furnish a detailed account of them to the provincial inspector. The cantonal inspector holds his office for three years, and is paid a *per diem* sum for his services. He must keep a regular journal of his visits, in which he must enter the results of his observation. He must also hold a conference of all the teachers in his district once in three months, for examination and discussion of their methods of teaching, and text-books used.

An inspector is also appointed for each of the nine provinces, whose duty it is to visit all the schools of the province once in the year, preside at the cantonal conferences of teachers, make an abstract of the journal or register of the cantonal inspectors, and submit a complete report of the condition of primary instruction in the province to the minister of the interior at Brussels. The provincial inspectors assemble once a year as a central commission, under the presidency of the minister of the department.

The teachers must be chosen from among candidates, who have for

two years at least, and with approval, pursued the studies of a normal school, either of the State or, if private, of one that has submitted to the inspection provided for in the law. Every teacher must receive a certificate of qualification from a board consisting of a lay and clerical member, the former appointed by the State, and the latter by the ecclesiastical authorities. He may be dismissed by the provincial inspector on consultation with the communal council.

The cost of the primary schools is borne by the communes, and included in their taxation. The provinces only interfere when the appropriation made by the commune is equal to the product of two centimes per cent. of the sum paid in direct taxes. The grants of money by the legislature are specially designed for establishing infant, Sunday, evening, and apprentices' schools. When the government is satisfied through the provincial inspector, that the instruction given by endowed, or private schools, is adequate to the wants of the commune, it may relieve the commune from the obligation of supporting a public school.

2. SUPERIOR PRIMARY SCHOOLS.

The law of 1842 provides for a superior elementary school in every large city, which, by the act of 1850, were connected directly with the next higher grade of schools in the system of public instruction. In 1846 there were twenty-six of these schools; in one of the best in each province, a normal course was provided for teachers of the schools below.

3. SECONDARY, OR INTERMEDIATE SCHOOLS.

Prior to 1850, in most of the cities and large towns, there were one or more institutions, known as atheneum, Latin school, gymnasium, &c., some of them public and some private, some under lay and others under ecclesiastical control, some for day and others for boarding pupils, and all designed to supply a middle course of instruction between the primary school and the university. In 1850 a law was passed to provide a class of public schools under the name of atheneum and secondary schools, to meet the double purpose, of preparation for higher literary studies, and for the practical pursuits of life. The schools are of two grades, higher and lower intermediate schools. The higher grade, known as atheneum, includes two sections, one for classical and the other for industrial instruction. Pupils, destined for collegiate studies, have a course of six years, in which prominence is given to the ancient and modern languages, and studies which are preliminary to the lectures and professional studies of the university. This course is similar to that of the gymnasia of Germany. Pupils destined for either of the four special schools of arts, engineering, mines, or war, have a course of four years, which include, in the lower grade, linear and mechanical drawing, surveying, and other applications of geometry; and in the higher, mathematics, mechanics, chemistry, and the elements of industrial economy. This course resembles that of the real schools of Germany.

4. SUPERIOR INSTRUCTION.

Higher instruction is dispensed by four universities; two supported by the State, at Ghent and Liege; two being free of all governmental control, one at Louvain, avowedly and intensely Catholic in its tone and management, and the other at Brussels, founded by an association, and professedly free from all denominational bias—the religious instruction of the pupils being left to parents, and the ministry of the several denominations, with which the pupils are connected. Each university is composed of four faculties—law, medicine, science, philosophy and letters; to these, at Louvain, there is a faculty of theology and canonical law. In 1850 there were about 1,400 students in the several departments of the four universities.

There are two academical degrees—that of *candidate* and *doctor*, which are bestowed, not by the university, but by a board of examiners, composed of men eminent for learning and science; each faculty or department having its separate sub-board, which is appointed by the king annually, two being nominated by the senate, two by the lower house, and three by the ministers of the government. This board hold its session at Brussels, and awards after a public examination, (*concour*) certificates and titles to those who are possessed of the greatest scientific and literary knowledge, without reference to the place, institution, or teachers, when this knowledge and ability has been acquired. The degree of *doctor* is accessible only to those who pursue the professional studies of law, medicine, or theology, and can not be conferred on any one who has not received the degree of *candidate*.

5. INDUSTRIAL AND SPECIAL INSTRUCTION.

Industrial instruction is given in institutions of three grades; higher instruction in the special schools of arts and manufactures and mines, attached to the university of Liege, those of civil engineering and of arts and manufactures annexed to the university of Ghent, and the superior institute of commerce at Antwerp; intermediate instruction in the industrial departments attached to all the athenæa and high schools; primary instruction in the industrial schools for workmen.

The preparatory school at Liege is intended to qualify pupils for the special schools for public service. The course of study, occupying two years, includes all the studies necessary for preparing mining engineers, practical chemists, and mechanics. The course in the special mining school, occupying three years, includes courses in applied mechanics, mineralogy and geology, industrial inorganic chemistry, industrial natural philosophy, exploration and working of mines, assaying, metallurgy, industrial architecture, mining, legislation and industrial economy. A diploma of mining engineer is delivered to those who pass the requisite examinations, and the pupils of the school are first examined for vacant places in the corps of engineers. The special school of arts and manufactures is divided into two sections, one for instruction in the applications of science to chemistry and mineralogy, and the other

for the construction of machines. The course of study in the former occupies four years, and in the latter, three. Pupils passing the required examination receive the diploma of civil engineer of arts and manufactures, or of engineer and machinist. The number of pupils in all these schools, for the academic year 1852-3, is 84; there being 42 in the preparatory school, 11 in the mining school, 16 in the school of arts and manufactures, 15 others, pursuing different courses.

The special school of arts and manufactures at Ghent is organized similarly to that at Liege, but is not yet in operation.

The superior institute of commerce at Antwerp, is also not yet in operation. It is intended to teach the science and art of commercial business.

Youth are prepared for the higher special instruction in the industrial department of the higher intermediate schools, or in the lower intermediate schools; with which two grades, the following institutions may also be classed, namely: the industrial schools of Ghent, Liege, Verviers and Huy; the provincial special school of commerce, industry, and mines, of Hainault; the provincial special school for master miners, attached to the college of Charleroi; the industrial and literary school of Verviers; the State veterinary and agricultural school at Cureghem-lez-Bruxelles, and the schools of navigation at Antwerp and Ostend. Here may also be classed the intermediate agricultural and horticultural schools established by government in 1849 and 1850, either by arrangements with municipal authorities for connecting special departments with the existing schools, or by agreements with private persons to convert farms or gardens into special schools. These are of two classes; 1, those designed to instruct the sons of land-owners, farmers, &c., in agricultural science; and 2, those designed to train good master-workmen.

Of the first class, are

	Number of pupils.
The agricultural department of the school at Tirlemont, . . .	15
" " " " " Chimay, . . .	27
" " " " " industrial school at Leuze, . . .	39
" " " " " " Verviers, . . .	16
" " " " " la Trapperie,	22
" " " " " Bergen-op-Zoom,	30
" " " " " the school at Oostacker,	25
" horticultural school at Genelbrugge-lez-Gand,	27

Of the second class, are

The practical horticultural school at Vilvorde,	29
" " agricultural " " Ostin,	23
" " " " " Rollé,	25
" school for making farm tools at Hain-Saint-Pierre,	12
Whole number of pupils,	289

The total expense of these schools is \$24 923.31, of which they receive from the State, \$21,445.33.

Primary industrial instruction is given in the following schools:

1. The school of arts and trades at Tournay, to which children are admitted to the number of about 80, at 12 years of age and upwards, and where they are taught reading, writing, and arithmetic, and at the same time the beginning of a trade. There are for this purpose five workshops; of carpentry, weaving, construction, founding, and hose-making.

2. The manufacturing or working schools, 740 in number. Lace-making alone is taught in 586 schools; lace-making, knitting, and sewing, in 135, and other trades in 19. In 479 of them, the pupils receive primary literary instruction, with the industrial training.

3. The apprentice schools, numbering 78. Their design is either to introduce new improvements into the trades of weaving and spinning, or to introduce new branches of industry, and thus to obviate the difficulties arising from the introduction of spinning machinery into the country, where a large portion of the population were accustomed to support themselves by spinning by hand.

The military school is one of the most important military establishments in Belgium, and is for the purpose of training officers of all arms. The instruction is given by a corps of not less than 18 professors, 14 tutors, and 6 masters. The pupils, whose number varies from 100 to 125, are divided into several sections, as follows: 1. Infantry and cavalry sections, (course two years,) composed of subalterns and young men admitted on public examination. 2. School proper, (course two years,) composed of pupils admitted by the minister of war, after examination. 3. School of application, (course two years,) of sub-lieutenants of engineers or artillery, who have been through a two years' course in the school. 4. Section of artillery and engineer officers, (course two years,) of lieutenants of artillery and engineers not having studied in the school, and placed there to complete their studies. 5. Section of Turkish pupils, comprises young officers of different arms of the Turkish army.

The military school corresponds with the three schools in France, called the school of Saint-Cyr, the polytechnic school, and the school of application (at Metz.)

Military schools of lower grade are: 1, the school for soldiers' children at Lierre, (course occupying five years, besides preparatory class,) composed of legitimate children of officers, subalterns, soldiers, and assistants in the war department, intended to furnish graduates fitted to become subalterns in the army; 2, regimental schools organized from the staff-officers, and forming part of the regimental battalion of reserve. These schools are of two grades, and are for the instruction of ignorant soldiers. There also exist regimental evening schools, for subalterns, corporals, and soldiers.

Thus the Belgian army has a social organization, quite as fit for peace as for war. The officers who leave their military employment easily find civil occupations. Veteran subalterns, on account of their

habits of order and discipline, are in request, as policemen, on railroads, as postmasters, and town tax-gatherers; the countrymen who return home after two years of service, carry with them the benefits of the primary course of instruction. Thus the army, a means of security in war, becomes an element of improvement in peace.

There are two veterinary schools, one at Brussels and the other at Liege. The school at Brussels embraces a complete course of instruction in agriculture.

The government supports three "conservatories" of music, the oldest at Liege, with an average attendance of 250 pupils; a second at Ghent, with 300 pupils; and the largest at Brussels, with 400 pupils. Every third year a *concour* is held for competition in musical composition, in which the successful competitor receives 10,000 francs for the purpose of a four years' tour in other countries. Besides these national schools, there are several local schools of music, by which a taste for this delightful art is made general.

There are over fifty schools and halls of drawing, painting, sculpture, and architecture, supported or aided by the government, with over 7,000 pupils. A national exhibition is held every three years, at which numerous prizes and premiums are offered for competition.

A national observatory is maintained at Brussels, and learned societies for the cultivation of science, literature, and the arts, are liberally patronized by the government. The geographical institute of M. Vandermaiden has largely contributed to the advancement of this branch of useful knowledge.

In 1848 there were fourteen public libraries, each having over 10,000 volumes, and all comprising 509,100 volumes.

The government supports two schools for deaf mutes, one for the blind, six for orphans, and three for young criminals.

NORMAL INSTRUCTION.

Normal instruction commands much and increasing attention from the Belgian government. Besides two normal schools for teachers and professors in the secondary and superior schools, there exist for primary teachers the following public normal schools, so called because entirely or partly supervised and supported by the government:

Two government normal schools, established and supported by the State.

Seven normal departments annexed to higher primary schools, established and assisted by government.

Seven episcopal normal schools, established and maintained by the Catholic bishops, but which have been placed under government supervision and regulations, and are assisted by its funds. Besides these public normal schools, there are others not officially recognized as public schools, viz.: the remaining episcopal normal schools, and private establishments.

There are also periodical meetings of public primary teachers, which

resemble the teachers' institutes of the United States, and which are called conferences. They are conducted by government officials, and partly at its expense, except a few which have been established by the teachers themselves.

Teachers' Conferences.—These are held quarterly during vacations, and conducted by the provincial or cantonal inspectors. Their sessions are short, generally occupying only one day, and never more than three. They are held within and for certain specified districts, the public primary teachers within which are legally bound to attend them. Instruction is given by the presiding officers, and by the teachers themselves, on various educational subjects; the inspectors usually presenting theoretical and scientific matter, and the teachers explaining their various methods, &c. The subjects to be discussed at each conference are announced at the close of the preceding one, and each teacher is expected to prepare himself on them at home. Private teachers and non-professional persons are not allowed to attend the meetings, unless for special reasons. An allowance of from twenty to thirty cents a day is paid to each member.

Each teacher is required, after his return home, to prepare an account of the proceedings of the meeting, and to forward it to the inspector, who selects the best for registration, as the public record of the meeting. Libraries for the use of the teachers belong to each conference, furnished generally in the first instance by the government, and sometimes increased by the contributions of teachers and other friends of education. The number of works in these libraries in 1848, was 5,908, in 9,352 volumes, estimated to be worth about \$2,700.

The number of teachers' conferences held in Belgium was, in 1846, 349; in 1847, 460; and in 1848, 635. The average length of their business sessions was five or five and a half hours.

The exercises at one of these conferences were as follows, according to the record made by one of the teachers present:

The session commenced at 10 A. M., with the signing an attendance-roll by the teachers, and a short prayer by the religious inspector. The civil inspector, who with his ecclesiastical brother presided over the meeting, proceeded to complain that sundry teachers had failed to present their reports of the previous meeting, and caused them to promise to do it. Several reports of that meeting were then read.

At this point the provincial inspector, M. Courtois, arrived, and assumed the direction of the business.

The order of the day being the best methods of teaching writing, M. Daulie gave an account of his method. His first lessons are for the position of the body and of the pen, and then follows the tracing of straight lines, curves, and ovals, from copies upon the blackboard.

M. Chevalier d'Herbécles exhibited his method at the board; it consists in drawing various ovals, from which he forms the different letters.

M. Courtois, the inspector, recommended the use of pasteboard slates for young pupils, as a means of teaching them early to write, and of keeping them occupied and still. He further remarked that instruction in writing might be divided into three parts; 1, formation of straight lines, curves, and ovals; 2, formation of letters, and of words in large and half text; 3, writing fine hand, and formation of different characters and forms of letters.

The session was suspended at twelve, and recommenced at half-past two.

The provincial inspector notified the teachers that they must keep school all the year; and it would become his duty to take rigorous measures with those who should not fulfill this obligation. In reply to M. Deltombe, who said that sometimes there were no scholars, he said that he could not admit that there was a total want of scholars, that such a case was impossible.

M. Maason explained his method of teaching the catechism. He uses the simultaneous and individual methods, with explanations from time to time.

The ecclesiastical cantonal inspector, M. Brohez, said that these explanations should be prepared under the direction of the priest. He also directed the attention of the teachers to the pronunciation of the catechism and of the prayers.

An exercise followed in teaching French, and another in grammar, the latter being a method of distinguishing between the verbal adjective and the present participle, illustrated upon the board.

Cantonal inspector Dubois gave instructions in agriculture and gardening, and recommended the teachers to communicate such instruction to their pupils.

The provincial inspector stated a curious fact with regard to transplanting the beet. It has two rows of roots, always pointing to the east and west, which in transplanting must be set in the same direction, otherwise the growth of the plant is much retarded.

Inspector Dubois informed the meeting that the next conference would take place October 19, 1848, and that the subjects for discussion would be methods of teaching arithmetic, and the first three centuries of Belgian history.

NORMAL SCHOOLS.

The inspection, management, and instruction of the State normal schools, the normal departments annexed to the higher primary schools, and the episcopal normal schools, are substantially alike in the three classes of institutions.

All candidates for entrance are examined by a "jury," composed partly of government inspectors and partly of the instructors. The courses of study occupy three years. The pupils are usually required to board and lodge upon the school premises. The regular graduates have the first right of examination for vacant situations as public teachers; and government, besides the assistance given to the normal schools by erecting buildings and bearing part of the current expenses, appropriates about \$12,500 annually in sums usually of about \$40 each, to the assistance of a number of the more meritorious pupils.

Schools of application are annexed to all the normal schools, being the primary schools of the neighborhood. The following account of the government normal school at Lierre will give a fair general representation of these schools.

NORMAL SCHOOL AT LIERRE.

Candidates for admission to the normal school at Lierre, are first examined by the provincial inspectors of primary instruction, who are charged in particular to see that none are admitted who are afflicted with any deformity or infirmity incompatible with the occupation of teaching. If suitable, they are then examined by a committee or "jury" of two inspectors and three of the faculty of the school, in reading, writing, religion, and morals, the grammar of their own and of the French language, the four fundamental rules of arithmetic, the legal system of weights and measures, the elements of geography, particularly of Belgian geography, and the principal facts of Belgian history.

The course of study at Lierre, occupying three years, embraces the following subjects, viz: religion and morals; sacred and church history; reading, writing, and book-keeping; grammar and composition; geography and history, especially of Belgium; arithmetic, and its business applications; elements of theoretical geometry, and of mapping, land measuring, and leveling; elementary algebra; portions of the natural sciences applicable to every-day life; agriculture and horticulture, grafting and pruning; theory of education, pedagogy and methodology; hygiene, as applicable to children and schools; elements of constitutional law; knowledge of the constitution and laws of Belgium, and of the most usual forms under them, church and school laws; singing and plain chant, playing the organ, harmony and accompaniment; drawing, linear, ornamental, and architectural. During the third year of the course, the pupils are required to teach the different classes in the schools of application or practice annexed to the normal schools, under the direction of the professors of pedagogy and methodology.

The instructors are a director and sub-director, who are ecclesiastics, nine professors, an adjunct professor, and a gardener-demonstrator; the full complement of pupils being 150.

The pupils board and lodge within the institution, and the entire apportionment of their time, occupations, and recreations, is under the control of the school authorities. The whole establishment is under the hygienic supervision of a physician, who directs any measures necessary for the health of the inmates.

There is a library of educational works, which receives a copy of every work published by government, or by its assistance, and some philosophical and chemical apparatus, maps, and models for drawing.

The entire expense of the school at Lierre, for 1848, was \$6,943.22, of which \$5,395.33 was paid for salaries.

There is an examination at graduation, according to the result of which three grades of diplomas are given. At present (1848) all the graduates of the normal schools are employed in teaching. The government continues the bounty above mentioned, for three years after graduation, to such recipients of it as do not find their salaries, as public teachers, sufficient for their support.

FEMALE NORMAL EDUCATION.

There are fifteen religious establishments and boarding-schools for females designated by government, to a certain number of pupils in which a bounty is paid similar to that given to male normal pupils. These institutions are under government inspection, and the beneficiaries in them are employed as public teachers after their graduation. The course of study is substantially similar to that of the normal schools for males, some studies, as geometry, agriculture, horticulture, and constitutional law, being omitted, and needlework and the application of drawing to the cutting and fitting of dresses being added.

XIII. PUBLIC INSTRUCTION IN HOLLAND.

I. PRIMARY SCHOOLS.

THE first impulse to improved primary instruction in Holland was given by some benevolent citizens of Groningen, who, in 1784, founded the "Society for the Public Good." They were encouraged and supported by the government, in their efforts to prepare school books, train schoolmasters, and excite attention to the state of schools. In 1806 the various edicts and regulations, published from time to time, were digested into a law, by M. Van der Ende, and were generalized for the guidance of the country at large. The French invasion curtailed the means applied to education; still the Dutch system was, as early as 1812, thought worthy of a special inquiry by Commissioners deputed from the University of Paris, at the head of which was M. Cuvier, who reported with no small admiration respecting it. On the restoration of peace in 1814, the first care of the king was directed to the state of public education, which by the law of that year was restored to the footing of 1806. Every province was divided into educational districts, and a school inspector was appointed to each district. A provincial School Commission was named from among the leading inhabitants of each province to co-operate with the inspectors, and a sum was charged on the budget for the educational outlay, from which the traveling expenses of the commissioners were to be defrayed.

The governments of the towns and provinces were charged with the cost of maintaining the schools, for which they provide in their local budgets. Teachers were classified into four ranks, according to their qualifications and acquirements, and received their appointments from Government. A sum was also destined for the encouragement of associations of teachers, who were to meet to confer on school management, to visit each other's schools, and to study in common the duties incumbent on their profession.

The best known methods of instruction were sought and tried, and a catalogue of the best school books was prepared and published in the course of the year 1814.

In 1825, a prize was offered by the "Society for the Public Good," for the best essay on the advantages and disadvantages of the monitorial system, and the simultaneous or class system of instruction. The prize was awarded to a dissertation by M. Visser, Inspector of Primary Schools in Friesland. In this essay, the system of monitorial instruction is analyzed,

and proved to be unsound on every point which bears upon education in the best sense of that term. This essay was published and widely distributed by the society, and contributed to form and strengthen the opinion which prevails in Holland, against the method of mutual instruction.

In 1816 the Normal School at Haarlem was established, to supply a deficiency which was felt for the training of teachers, through the influence of M. Van der Ende, who is esteemed the father of education in Holland. A similar institution had previously been commenced on a small scale at Groningen, by the Society of Public Good. Up to the establishment of the Normal School at Groningen, teachers had been trained in Holland, by serving a sort of apprenticeship from the age of 14 to 16 or 18, as assistants in the larger schools, during the day, and receiving a course of special instruction, for one hour every evening. This, as far as it goes, is a cheap and excellent mode of professional training. But the experience of fifteen years satisfied her statesmen and educators, that this was not sufficient. It made good schoolmasters, but not inquiring and creative teachers. It produced rather routine than intelligent teaching, and arrested the progress of improvement, by perpetuating only the methods of those schools in which the young teachers had been practiced as assistants. To obviate this tendency, and to give to teachers a broader and firmer basis of attainments and principles, Normal Schools were established. The two modes are now continued together,* and in connection with the stimulus of the severe examination through which all teachers must pass, and of the direct and constant inspection to which all scholars are subjected, they have made the elementary schools of Holland inferior to none other in Europe. President Bache, in his Report on Education in Europe, pronounces them superior to those of the same class in any of the European states.

The attendance of children is not made compulsory on parents, but, what is equivalent to such an enactment, it is provided by law, that outdoor relief shall not be administered to any family, where children are allowed to run wild in the streets, or grow up as vagrants, or are employed in any factory without a previous elementary training.

The schools are not made free to parents by governmental contribution or local taxation, although both of these modes of supporting schools are resorted to. The schools are in the first place made good, by providing for the employment of only well-qualified teachers, and then the schools, thus made good, are open to all parents without exception or distinction, and all are required to pay a tuition fee, which the government provides shall not be large in any case. The result is universal education throughout Holland. In Haarlem, with a population of 21,000 in 1840, there was not a child of ten years of age, and of sound intellect, who could not both read and write, and this is true throughout Holland, according to the testimony of intelligent travelers, and is borne out by the following official table, (page 608,) as to the school attendance in 1846.

* See page 644.

The superiority of public elementary instruction in Holland, as attributed, by her own educators, and by intelligent foreigners, who have visited her schools in the rural districts, as well as in the large towns, to that system of special inspection, combined with specific and enforced preparation of all candidates for the office of teacher, and subsequent gradation of rank and pay, according to character and skill, which has now been in operation nearly half a century, ever since the first school law of the Batavian Republic, in 1806, drawn up by that wise statesman, M. Van der Palm. The following extracts will give at once this testimony, and an intelligent account of the system of inspection.

Baron Cuvier, in his "*Report to the French Government on the establishment of Public Instruction in Holland*," in 1811, after speaking with special commendation of the system of inspection, remarks :

"The government is authorized to grant to each province a certain sum to meet the compensation, and the expenses of travel, and meeting of the inspectors. The mode of choosing them is excellent; they are taken from clergymen, or laymen of education, who have signalized themselves by their interest in the education of children, and skill in the local management of schools; from the teachers who have distinguished themselves in their vocation; and in the large towns, from the professors of the Universities and higher grade of schools."

Mr. W. E. Hickson, now Principal of the Mechanics Institute in Liverpool, in an "*Account of the Dutch and German Schools*," published in 1840, remarks :

"In Holland, education is, on the whole, more faithfully carried out than in most of the German States, and we may add that, notwithstanding the numerous Normal Schools of Prussia, (institutions in which Holland, although possessing two, is still deficient,) the Dutch schoolmasters are decidedly superior to the Prussian, and the schools of primary instruction consequently in a more efficient state. This superiority we attribute entirely to a better system of inspection. In Prussia, the inspectors of schools are neither sufficiently numerous, nor are their powers sufficiently extensive. Mr. Streiz, the inspector for the province of Posen, confessed to us the impossibility of personally visiting every one of the 1,635 schools in his district, and admitted that he was obliged, in his returns, to depend to a great extent upon the reports of local school committees. In Holland, inspection is the basis upon which the whole fabric of popular instruction rests.

The constitution of the Board is well worthy of attention; there can be no judges of the qualifications of teachers equal to those whose daily employment consists in visiting schools, and comparing the merits of different plans of instruction. But the power given to the inspector does not end here: by virtue of his office he is a member of every local board, and when vacant situations in schools are to be filled up, a new examination is instituted before him into the merits of the different candidates. It is upon his motion that the appointment is made, and upon his report to the higher authorities a master is suspended or dismissed for misconduct. Through his influence children of more than ordinary capacity in the schools he visits, are transferred, as pupils, to the Normal Schools, in order to be trained for masters; and through his active agency all improved plans or methods of instruction are diffused throughout the various institutions of the country."

M. Cousin, in a Report to the minister of Public Instruction in France, in 1836, "*on the state of Education in Holland*," while giving a preference to the school law of Prussia, in its provision for Normal Schools, and the classification of public schools, and especially for the support of the higher class of primary schools, assigns the palm to Holland, in the matter of school inspection.

"The provincial boards of primary instruction, with their great and various powers, constitute, in my mind, the chief superiority of the Dutch over the Prussian law. They resemble the *Schul-collegium*, which forms a part of every provincial consistory in Prussia; but they are far better, for the *Schul-collegium* is not composed of inspectors. It sends out some of its members to inspect, as occasion requires, but inspection is not its function. It judges from written documents, and not from ocular proof, and is generally obliged to rely upon the sole testimony of the member sent to inspect; whereas in Holland, the board, being both inspectors and judges of inspections, are on the one hand better judges, in consequence of the experience they have acquired in a constant routine of inspection; and, on the other hand, they are better inspectors, by what they learn at the board, when acting as judges and governors, a combination eminently practical, and uniting what is almost every where separated.

Every inspector resides in his own district, and he is bound to inspect every school at least twice a year, and he has jurisdiction over the primary schools of every grade within the district. Without his approval no one can either be a public or a private teacher; and no public or private teacher can retain his situation, or be promoted, or receive any gratuity; for no commissioner has any power in his absence, and he is either the chairman or the influential member of all meetings that are held. He is thus at the head of the whole of the primary instruction in his particular district. He is required to repair three times a year to the chief town of the province, to meet the other district inspectors of the province, and a conference is held, the governor of the province presiding, which lasts for a fortnight or three weeks, during which time each inspector reads a report upon the state of his district, and brings before the meeting all such questions as belong to them. As each province has its own particular code of regulations for its primary schools, founded upon the law and its general regulations, the provincial board examines whether all the proceedings of the several inspectors have been conformable to that particular code; they look to the strict and uniform execution of the code; they pass such measures as belong to them to originate, and they draw up the annual report which is to be presented to the central administration, and submit such amendments as appear to them necessary or useful, and of which the central administration is constituted the judge. Under the Minister of the Interior there is a high functionary, the Inspector-general of Primary Instruction; and from time to time a general meeting is summoned by the government, to be held at the Hague, to which each provincial board sends a deputy; and thus, from the Inspector-general of the Hague, down to the local inspector of the smallest district, the whole of the primary instruction is under the direction of inspectors. Each inspector has charge of his own district, each provincial board has charge of its province; and the general meeting, which may be called the assembly of the states-general of primary instruction, has charge of the whole kingdom. All these authorities are, in their several degrees, analogous in their nature; for all are public functionaries, all are paid and responsible officers. The district-inspector is responsible to the provincial Board of Commissioners; and they are responsible to the Inspector-general and the Minister of the Interior. In this learned and very simple hierarchy the powers of every member are clearly defined and limited."

Mr. George Nicholls, in a "*Report on the condition of the Laboring Poor in Holland and Belgium*," to the Poor Law Commissioners of England, in 1838, remarks:

"The measures adopted in Holland to promote the education of all classes,

have apparently resulted from the conviction that the moral and social character of the people, their intelligence, and their capacity for increasing the resources of the country, must in a great measure depend upon the manner in which they are trained for the fulfillment of their several duties. The state has not rendered education actually obligatory upon the municipalities, neither has it required evidence of the education of the children of the poorer classes by any educational test; for a sense of the importance of education pervades the entire community—it is sought by the poor for their children, with an earnestness similar to that observed in the more wealthy classes in other countries; and in Holland, the direct interference of government is confined to regulating the mode of instruction, by means of an organized system of inspection.

This system, however much it may interfere with the liberty of the subject, has certainly some advantages. The poor, who have no means of judging for themselves, have, in the certificate given to every schoolmaster, some sort of guarantee that the person to whom they send their children is not an ignorant charlatan, professing to teach what he has never learned, and in the next place it secures to those who devote themselves to the profession a much higher rate of remuneration than they would receive if, as with us, every broken-down tradesman could open a school when able to do nothing else. This exclusion of absolute incapacity is also a means, and a very powerful one, of raising the character of the profession in popular estimation. With us, any man can become a schoolmaster, as easily as he can a coal-merchant, by simply putting a brass plate on his door; but in Holland, (and the same system is very general in Germany,) some degree of study is rendered indispensable, and the whole class, therefore, stand out from the rest of the community as men of superior attainments, and enjoy that consideration which men of cultivated minds everywhere command, when not surrounded by coadjutors below rather than above the common level.

In Holland, there is no profession that ranks higher than that of a schoolmaster, and a nobleman would scarcely, if at all, command more respect than is paid to many of those who devote their lives to the instruction of youth. The same personal consideration is extended to the assistant teacher or usher. We were much struck with the difference in the position of persons of this class abroad, from their lot at home, when we were visiting a school for the middle classes at Hesse-Cassel. The school contained 900 children, and was supported partly by the town and the government, and partly by the payments of the scholars. The charge for daily instruction was from 1s. 8d. to 5s. per month. The children were distributed in six classes—to each class a separate master or assistant teacher. We were conducted over the establishment by the head master or director of the school, and the first thing which drew our attention was the extreme ceremony with which we were introduced to each of the assistant masters, and the many apologies made by the professor for interrupting them, although but for a moment, in their important labors. We saw those treated as equals, who are in England often estimated as only on a rank with grooms or upper servants.

The most important branch of administration, as connected with education, is that which relates to school inspection. All who have ever been anxious either to maintain the efficiency of a school, or to improve its character, will appreciate the importance of the frequent periodical visits of persons having a knowledge of what education is, and who are therefore able to estimate correctly the amount and kind of instruction given. Let a school established by voluntary subscriptions be placed to-day upon the best possible footing, if no vigilance be exercised by its founders, and if the master be neither encouraged nor stimulated to exertion by their presence, his salary will speedily be converted into a sinecure, and the school will degenerate to the lowest point of utility."

Professor Bache, in his "*Report on Education in Europe*," in 1838, to the Trustees of Girard College, remarks:

"The system of primary instruction in Holland is particularly interesting to an American, from its organization in an ascending series; beginning with the local school authorities, and terminating, after progressive degrees of representation, as it were, in the highest authority; instead of emanating, as in the centralized systems, from that authority. A fair trial has been given to a system

of inspection which is almost entirely applicable to our country, and which has succeeded with them."

The school system of Holland consists of a brief law, of only twenty-three articles, drawn up by M. Van der Palm, the distinguished Oriental scholar, in 1801, and modified by M. Van der Ende, in 1806, and a series of Regulations drawn up by the state department having charge of this subject, to carry out the provisions of the law. The law was so wisely framed, and was so well adapted to the spirit, customs and habits of the people, that it has survived three great revolutions: first, that which converted the Batavian Republic into a kingdom, at first independent, but afterward incorporated with the French empire; next, that which dethroned Louis, restored the house of Orange, and united Holland and Belgium in one monarchy; and lastly, the revolution which again separated the two countries, and restricted the kingdom of the Netherlands to its former limits. During these thirty years, the law of 1806 was never interfered with; it could only be altered by another law, and when the government, in 1829, in order to please the Belgian liberal party, brought forward a new general law, which made some very objectionable changes in that of 1806, the chambers resisted, and the government were obliged to withdraw the bill.

The following provisions will show the spirit and scope of the law, and general regulations.

IX. "The school inspector of the district is authorized, in concert with the local authorities, to intrust one or more known and respectable persons with a local inspection, subordinate to his own, over the school or schools, and also over all the teachers of both sexes in the place, whether village, hamlet, or otherwise, and for each separately.

X. In all the more considerable towns and places, the parochial authorities, in concert with the school inspector of the district, shall establish a local superintendence of the primary schools, which shall consist of one or more persons, according to local circumstances, but so as each member shall have a particular division, and all the schools in that division shall be confided to him individually. These persons shall collectively constitute, with the school inspector of the district, the local school board.

XVII. No one shall be allowed to become a candidate for a vacant school, or to establish a new one, or to give private lessons, without having first obtained a certificate of general admission. In like manner, no one shall be allowed to teach any other branch than that for which he shall have received a certificate of general admission.

XXII. The instruction shall be conducted in such a manner, that the study of suitable and useful branches of knowledge shall be accompanied by an exercise of the intellectual powers, and in such a manner that the pupils shall be prepared for the practice of all social and Christian virtues.

XXIII. Measures shall be taken that the scholars be not left without instruction in the doctrinal creed of the religious community to which they belong; but that part of the instruction shall not be exacted from the schoolmaster.

XXX. The provincial* and parochial authorities are recommended to take the necessary steps:

* The constitution of Holland is somewhat singular, and would seem at first sight to be founded upon what perhaps may one day be recognized as the true theory of representative government, that of progressive, intermediate elections. The rate-payers elect the *Kiezers*, the *Kiezers* elect the *Raad* or town council, the town council elect a certain proportion of the members of the provincial governments, and the provincial governments elect the lower chamber of the *States General*, or House of Commons.

The *States-General* consist of two chambers. The upper chamber is somewhat of a House of Lords, but not hereditary. The members, fifty in number, receive 250*l.* per annum for travelling ex-

1. That the emoluments of the teacher (principally in rural parishes) be settled in such a way that his duties, when creditably performed, may obtain for him a sufficient livelihood, and that he be rendered as little dependent as possible, by direct aid, upon the parents of the children who frequent his school.
2. That attendance at the schools be strictly enforced, and that they be kept open throughout the year."

REGULATIONS RESPECTING THE EXAMINATION OF THOSE WHO DESIRE TO BECOME
TEACHERS OF PRIMARY SCHOOLS.

I. The teachers shall be divided into four classes, or grades, according to the amount of knowledge required, and according to the examination which they shall have passed.

VII. In these examinations, the object shall be to ascertain not only the extent of knowledge of the candidate in the branches he is proposing to teach, but also his power of communicating that knowledge to others, and especially to children.

VIII. Before proceeding to the examination properly so called, the examiners shall endeavor to ascertain, in conversation with the candidate, his opinions on morals and religion; the sphere of his attainments, both with regard to the most indispensable parts of primary instruction, and to foreign languages and other branches which he proposes to teach; together with his aptitude to direct, instruct, and form the character of youth.

IX. The subjects of examination shall be as follows:

1. Reading from different printed and written characters; and whether with a good pronunciation and a proper and natural accent, and with a knowledge of punctuation.

2. Some words and phrases designedly wrong shall be shown to the candidate, to ascertain his knowledge of orthography.

3. To ascertain his acquaintance with the grammatical structure of the Dutch language, a sentence shall be dictated to him, which he shall analyze, and point out the parts of speech; and he must give proofs of a familiar acquaintance with the declensions and conjugations.

4. The candidate shall write some lines in large, middle, and small hand, and shall make his own pens.

5. Some questions in arithmetic shall be proposed to him, confining this especially to such as are of common occurrence, and which shall be sufficient to show the dexterity of the candidate in calculations, both in whole numbers and in fractions. Questions shall be put to him on the theoretical parts, and especially on decimal arithmetic.

6. Some questions shall be proposed on the theory of singing.

7. Different questions shall be proposed relative to history, geography, natural philosophy, mathematics, and such other branches of knowledge as the candidate proposes to teach.

8. A passage in French, or in any other language in which the candidate wishes to be examined, shall be given to him to read and translate. A passage in Dutch shall be dictated to him, to be translated by him, either in writing or *viva voce*, into the language which forms the subject of the examination. He shall be required to give, *de improvviso*, in the same language, a composition in the form of a letter or narrative, &c., all for the purpose of ascertaining the degree of acquaintance he possesses with the language in question, in orthography, grammar and punctuation.

penas. The lower chamber, before the Revolution, consisted of 110 members, now but of fifty-five. The provincial governments are:

North Brabant,	43 members.	Friesland,	54 members.
Guelderland,	90 "	Overijssel,	53 "
Holland,	90 "	Groningen,	36 "
Zeeland,	46 "	Drenthe,	24 "
Utrecht,	36 "		

The members of these provincial governments are not elected by the town councils, but by the nobility; the town councils, and Kiezers of the country districts, nearly in equal proportions. General business affecting more than one province, is referred to one or other of two committees, or provincial cabinets, elected by the members of the provincial governments. On these committees one member sits for each province.

X. The examination upon the acquirements of the candidate having been completed, the examiners shall proceed to inquire into his capacity for teaching; they shall question him as to the manner of teaching children to know the letters, figures, and the first principles; then reading, writing, and arithmetic. They shall then require him to relate some story or portion of history, in order to discover the degree of talent he possesses to present things to children with clearness and precision; care shall be taken, if there be a convenient opportunity, and if it be thought advisable, to have some children present, of different ages, and of different degrees of attainment, in order to ascertain more particularly his skill in practical teaching.

XI. Finally, the examiners shall propose some questions upon the principles to be followed in rewards and punishments; as also in general on the best methods to be adopted, not only to develop and cultivate the intellectual faculties of children, but most especially to bring them up in the exercise of the Christian virtues.

XII. When the examination is concluded, the examiners shall deliver to the candidate, who desires to obtain a general admission as a master, and has given proof of sufficient ability, a deed of that admission, according to the extent of his ability; and in this shall be stated, as distinctly as possible, the extent and the nature of the talents and of the acquirements of the candidate, as proved by his examination; and it shall declare the rank he has obtained, if it be in the first, second, third, or fourth class, and consequently such a general admission as shall give him a right to apply for the situation of a master, according to the rank which has been assigned to him. Finally, the said deed shall declare the branches of education, and the languages for which he shall have obtained the general admission.

XIII. The schoolmistresses or teachers of languages who shall have passed an examination, and have given sufficient proofs of their ability, shall also receive a deed which shall contain, besides a declaration of the extent and amount of their acquirements and talents, as proved by the examination, a general admission either for the office of schoolmistress or teacher of languages. That deed shall moreover expressly declare the branches of study and the languages which the person examined shall be entitled to teach.

XIV. All the deeds mentioned in the two preceding articles shall be alike throughout the whole extent of the republic, both in the matter and the form. If they are issued by a provincial board of education, they shall be signed by the president and secretary, and the seal of the board shall be affixed to them. The deeds issued by an inspector, or by a local board, shall be signed by the inspector only, or by the secretary of the local board.

XV. The certificates for the first and second class, issued by a provincial board, shall entitle those who obtain them to be masters in all primary schools, public as well as private, of the two classes, in all places throughout the republic, without exception; whereas the deeds issued by a local board shall confer no privilege beyond that locality.

XVI. The certificates for the third class, as well as those for the fourth or lowest class, shall confer the privilege of becoming teachers, except in schools established in places whose wants are proportioned to the rank and capacity of such masters, and which are situated within the jurisdiction of the provincial board.

XVII. In order that the provisions contained in the two preceding articles may be more easily carried into effect, the schools in small towns and less considerable places, more fully described in Art. 9 of regulation A, shall be classed by the different inspectors and by the provincial boards, into higher, middle, and lower schools, upon a principle hereafter provided. This classification, which shall be submitted to the provincial authorities for approval, shall be solely for the purpose of preventing the principal school falling into the hands of incompetent masters; while, at the same time, it leaves the power of placing a very able master over the smallest school.

XVIII. In the towns or places of greatest importance, no master of the fourth or lowest class shall be eligible to either a public or a private school. The local boards are even recommended to take care, as much as possible, that the tuition in the schools of their towns shall not be entrusted to any other than *masters of the first or second class.*

XXIV. A list containing the name, the rank, the nature, and the extent of

the abilities of each of those who shall have obtained deeds of general admission as master, mistress, or teacher of languages, shall be published in the periodical work entitled 'Bydragen tot den Staat,' &c., (which is still published.)"

It is impossible not to see that the stimulating effect of a series of examinations of this character, before a tribunal composed of qualified judges, must produce a class of teachers for the work of primary instruction unequalled in any other part of the world. But the soul of the whole system is *inspection*, or in other words, active and vigilant superintendence,—intelligent direction, and real responsibility,—all of which are involved in the system of inspection carried out in Holland. Without inspection there can be no competent tribunal for the examination of teachers; without inspection, local school committees and conductors of schools would be irresponsible to public opinion, inert and negligent; without inspection there would be no person constantly at hand sufficiently informed upon the state of education to suggest the measures required for the promotion of its objects; without inspection there would be no diffusion of new ideas, no benefiting by the experience of others, no rivalry in improvement, no progress. The following extracts will show the manner in which the duties of inspection are provided for.

REGULATIONS FOR SCHOOL INSPECTORS, AND FOR THE BOARDS OF EDUCATION IN THE DIFFERENT PROVINCES.

II. "Each inspector shall make himself acquainted with the number and situations of the primary schools, and also with the state of primary instruction throughout the whole extent of his district. It shall be his duty to see that, besides the necessary number of ordinary schools, there shall be a sufficient number of schools for children of tender age, organized in the best possible manner, and also schools of industry. Finally, he shall take care, that proper instruction in all branches of primary education may be obtained, according to the circumstances and wants of the different parishes.

III. He shall make it his business to become personally acquainted with the different masters in his district, and with the extent of their fitness, and shall keep a note thereof.

IV. He shall make it his special business to excite and maintain the zeal of the masters; and for that purpose, he shall at fixed periods require a certain number of them to meet him, either at his own house or in other parts of his district, and as frequently as possible.*

V. The inspector shall be bound to *visit twice a year* all the schools in his district, which are directly subject to his supervision. He is hereby exhorted to repeat those visits at different times, either when a particular case calls for it, or for the general good.

VI. In visiting the schools which are under his direct supervision, he shall call upon the master to teach the pupils of the different classes in his presence, those which are in different stages of progress, in order that he may judge as to the manner in which the instruction is given and regulated. He shall also inquire if the regulations concerning primary instruction, as well as the regulation for the internal order of the school, are duly observed and executed; and he shall pay attention to every thing which he believes to be of any importance. At the conclusion of the visit, the inspector shall have a private conversation with the master or mistress, upon all he has observed: and according as the case may be, he shall express approbation, give them advice, admonish, or censure them, upon what he may have seen or heard. Every school inspector

* In compliance with the spirit of this article, societies of schoolmasters have been formed, under the auspices of the inspectors, at different times, in the districts of each province, which keep up a rivalry of improvement. They meet at stated times, generally every month.

shall keep notes of all remarks and observations which he shall have made in the course of his visits, to be used in the manner hereinafter provided.

IX. They shall pay particular attention to improve the school-rooms; to the education of the children of the poor, and especially in the villages and hamlets; to regulate and improve the incomes of the masters; and to the schools being kept open and attended without interruption, as much as possible, during the whole year.

XVIII. The ordinary meetings of the boards shall be held in the towns where the provincial authorities reside, at least three times a year; the one during Easter week, the other two in the second week of July and October.

XXIV. At each ordinary meeting, each member shall give in a written report:—

1. Of the schools he has visited since the last meeting, stating the time of his visit, and the observations he then made regarding the state of the schools, in all the different particulars.

2. Of the meetings he has held of the schoolmasters for the purpose of communicating with them respecting their duties.

3. Of the examinations which have taken place before him of masters of the lowest class, and of the higher classes.

4. Of the changes and other events which shall have taken place in his district, relative to any school or schoolmaster, since the last meeting, and especially all vacancies of masterships, the delivery of deeds of call, nomination, or special appointment of every degree and of every class, setting forth the most important circumstances connected with them: the appointment of local inspectors in places of minor extent; the changes that may have occurred in the local school boards; the inspection of a new primary school or school of industry; the admission of any teacher of languages; the drawing up of any rules for the internal order of schools; the introduction of school books, other than those contained in the general list of books, in the private schools of both classes; the measures that have been taken to regulate and improve the incomes of the masters; the measures that have been taken to secure the schools being uninterruptedly kept open and attended; any difficulties they may have encountered; the encouragement or otherwise which the masters may have met with; and the examinations of pupils in the schools. The inspector shall further point out the particular parts which he wishes to have inserted in the above mentioned monthly publication, (*Bydragen*.)

XXV. From these written documents and other private information, as well as from the written reports of the local school boards, (as mentioned in the following article,) every school inspector shall draw up annually, previous to the meeting held in Easter week, a general report on the state of the schools and of primary instruction throughout his district. He shall state therein the reasons why he has not visited, or has not visited more than once, any particular school in the course of the preceding year. He shall state such proposals as appear to him deserving of attention, and which may tend to the improvement of primary instruction.

XXVI. In order that the school inspectors may not omit to mention, in their annual report, any of the particulars stated in the preceding article, the local school boards, or their individual members, in so far as concerns the schools placed under their individual inspection, shall draw up a report in writing, similar to that required from the school inspectors, before the end of February at latest.

XXIX. At the conclusion of the ordinary meeting held in Easter week, each board shall forward, or cause to be forwarded within the space of four weeks, to the Secretary of State for the Home Department, besides the documents mentioned in the preceding article,

1. One of the two authentic copies of the annual general summary.

2. The originals of the general reports of the different members of the boards.

3. The originals of the annual written reports of the different local boards.

4. A detailed statement, taken from the report of each of the members, of the proposals which each board shall be desirous of bringing under the consideration of the next annual general meeting, or which it has been resolved to lay before the provincial authorities."

REGULATIONS RESPECTING THE GENERAL ORDER TO BE OBSERVED IN THE PRIMARY SCHOOLS.

I. "The primary schools shall be open without intermission the whole year, except during the times fixed for the holidays.

II. During the whole time devoted to the lessons, the master shall be present from the beginning to the end; he shall not be engaged in any thing which is unconnected with the teaching, nor absent himself from school, except for reasons of absolute necessity.

III. The master shall take care that the pupils do not unnecessarily go out of school; and especially that they be quiet and attentive; and, when in the playground, that they always conduct themselves in a peaceable, respectable, and modest manner.

IV. When the number of pupils shall exceed seventy, measures shall be taken for providing a second master or an under master.

V. The pupils shall be entered, as much as possible, at fixed terms in the course of the year.

VI. At the opening and at the breaking up of each class, a Christian prayer, solemn, short, and suitable to the occasion, shall be said daily or weekly. At the same time, a hymn, adapted to the circumstances, may be sung.

VII. The pupils shall be divided into three classes, each of which shall have its distinct place; and on every occasion when the school meets, each shall receive the instruction that belongs to it.

VIII. The instruction shall be communicated simultaneously to all the pupils in the same class; and the master shall take care that, during that time, the pupils in the two other classes are usefully employed.

IX. The instruction in the different classes, and in the different branches taught, shall be as much as possible conveyed by the use of the black board.

X. When the master shall think it advisable, he shall reward the most advanced pupils by employing them to teach some parts of the lessons to the beginners.

XI. The master shall take care that the pupils be at all times clean in their dress, well washed and combed, and he shall at the same time pay the strictest attention to every thing that may contribute to their health.

XII. The school-rooms shall be at all times kept in proper order; for that purpose they shall be ventilated in the intervals of school hours, and cleaned out twice a week.

XIII. An examination of each school shall take place at least once a year. Upon that occasion the pupils of a lower class shall be passed to a higher; and as far as circumstances will allow, rewards shall be given to those who have distinguished themselves by their application and good conduct.

XIV. When a pupil at the end of the course of study shall leave the school, if he shall have distinguished himself by the progress he has made and by his good conduct, a certificate of honor shall be presented to him.

XV. A code of regulations shall be drawn up for each particular school, and this, whether written or printed, shall be pasted on a board, hung up in the room, and from time to time read and explained by the master.

XVI. The said codes shall be issued by the authorities over each school; their object shall be, to regulate the hours of teaching and how these shall be divided among the three classes."

As the masters were prohibited from teaching any particular religious doctrine in the schools, the government, through the Secretary of State for the Home Department, addressed a circular letter to the different ecclesiastical bodies in the country, inviting them to take upon themselves, out of school hours, the whole instruction of the young, either by properly-arranged lessons in the catechism, or by any other means. Answers were returned from the Synod of the Dutch Reformed church and other ecclesiastical bodies, assenting to the separation of doctrinal from the other instruction of the schools, and pledging themselves to extend

the former through their ministers of the different religious communions. On the reception of these answers, the government authorized the provincial boards of education :

"To exhort all schoolmasters to hand a complete list, every six months, of the names and residences of their pupils belonging to any religious communion to such as should apply for it ; and to take care that their pupils attend to the religious instruction provided for them.

To invite the governors of orphan asylums and workhouses, and similar establishments, to second the measures which the authorities of the communion shall take in reference to religious instruction.

To exhort the school inspectors, and through them the local school boards, to co-operate, as far as possible, with the consistories and ministers in their efforts to give instruction in the doctrines of their religion, so long as they confine themselves to their special province, and do not interfere with the business of the schools or the authority of the persons intrusted with their management by the government."

Thus did the Batavian Republic provide that the children should be prepared for "*the exercise of all the social and Christian virtues*;" well knowing, that if the schools did no more than impart a knowledge of the material world, there might be profound ignorance of the good and the beautiful, and of the true destiny of human nature.

On the practical operation of the provisions for religious and moral education, we adduce the following testimony. Mr. Kay remarks—

The law of 1801 proclaims, as the great end of all instruction, the exercise of the social and Christian virtues. In this respect it agrees with the law of Prussia and France ; but it differs from the law of these countries in the way by which it attempts to attain this end. In France, and all the German countries, the schools are the auxiliaries, so to speak, of the churches ; for, whilst the schools are open to all sects, yet the teacher is a man trained up in the particular doctrines of the majority of his pupils, and required to teach those doctrines during certain hours, the children who differ from him in religious belief, being permitted to absent themselves from the religious lessons, on condition that their parents provided elsewhere for their religious instruction. But, in Holland, the teachers are required to give religious instruction to all the children, and to avoid most carefully touching on any of the grounds of controversy between the different sects.

Mr. Nicholls says : "As respects religion, the population of Holland is divided, in about equal proportions, into Catholic, Lutheran, and Protestants of the reformed Calvinistic Church ; and the ministers of each are supported by the state. The schools contain, without distinction, the children of every sect of Christians. The religious and moral instruction afforded to the children is taken from the pages of Holy Writ, and the whole course of education is mingled with a frequent reference to the great general evidences of revelation. Biblical history is taught, not as a dry narration of facts, but as a store-house of truths, calculated to influence the affections, to correct and elevate the manners, and to inspire sentiments of devotion and virtue. The great principles and truths of Christianity, in which all are agreed, are likewise carefully inculcated ; but those points, which are the subjects of difference and religious controversy, form no part of the instructions of the schools. This department of religious teaching is confided to the ministers of each persuasion, who discharge this portion of their duties out of school ; but within the schools the common ground of instruction is faithfully preserved, and they are, consequently, altogether free from the spirit of jealousy or proselytism. We witnessed the exercise of a class of the children of notables of Haarlem, (according to the simultaneous method,) respecting the death and resurrection of

our Saviour, by a minister of the Lutheran church. The class contained children of Catholics, Calvinists, and other denominations of Christians, as well as Lutherans, and all disputable doctrinal points were carefully avoided. The Lutherans are the smallest in number, the Calvinists the largest, and the Catholics about midway between the two; but all appear to live together in perfect amity, without the slightest distinction in the common intercourse of life; and this circumstance, so extremely interesting in itself, no doubt facilitated the establishment of the general system of education here described, the effects of which are so apparent in the highly moral and intellectual condition of the Dutch people."

Baron Cuvier, in his report to the French government in 1811, says:

The means devised for the religious instruction of all persuasions are extremely ingenious, and at the same time highly appropriate, without involving them in dangerous controversy. The particular doctrines of each communion are taught on Sundays, in the several places of worship, and by the clergy. The history of the New Testament, the life and doctrines of Jesus Christ, and those doctrines in which all Christians agree, are taught in the schools on Saturdays, the day on which the Jews do not come to school, on account of their sabbath. But those truths which are common to all religions, pervade, are connected with, and are intimately mixed up with every branch of instruction, and every thing else may be said to be subordinate to them.

Mr. Chambers, of Edinburgh, in describing a visit to the public school of Rotterdam in the *Edinburgh Journal*, observes:

Instruction is given in reading, writing, arithmetic, geography, history of Holland, Bible history, and singing. I made inquiry of the head master, if any religious (dogmatic) instruction was given in the school, and he answered there was not. The children belong to different religious bodies and attend their respective clergymen on stated occasions, for instruction in the doctrines and principles of religion. The Bible history which is taught in the schools comprises only parts, in the truth of which all parties agree. The great regularity and silence which prevailed, the extent of the gratuitous instruction conferred, and the harmonious congregating together in one school of so many children of different religious creeds, were circumstances which I could not pass over unmoved; my only wish that the mass of my countrymen could conveniently have been introduced to enjoy the scene.

All the children of Holland may not, indeed, be at school at any given time, but every one goes to school at some time, and therefore there are none without education. This result is sensibly observed in the aspect of the Dutch towns. You see no bands of loose and disorderly children in the streets, such as offend the eye in the lower parts of almost every large town in Britain.

In all of the Dutch schools, habits of propriety, cleanliness, and order, are, not only in, but out of doors, strictly enforced, as well as practically illustrated in the manners of the teacher. Mr. Chambers quotes in a note the remark of a correspondent of the *London Standard*, that 'in no country is the mass of the people so religious, showing that the mode of education has not hurt religion.'

NUMBER AND ATTENDANCE

OF PUBLIC, PARISH, AND OTHER PRIMARY SCHOOLS IN HOLLAND IN 1840.

Provinces.	Population Jan. 1st, 1841.	Public Parish Schools.	Scholars.		Schools on Spec- ial Foun- dations.		Scholars.		Scholars. by District.		Scholars.		Total Schools.	Scholars.		Total.	No. of Districts.
			Boys.	Girls.			Boys.	Girls.	Boys.	Girls.	Boys.	Girls.		Boys.	Girls.		
North Brabant.	402,353	294	22,063	15,118	12		863	735	78		980	3,213	379	23,403	19,066	42,472	9
Gelderland....	371,877	327	26,461	19,656	19		1,306	928	41		1,349	738	387	29,116	21,350	50,466	10
South Holland..	564,791	254	23,771	19,489	40		3,477	3,167	149		4,964	3,454	443	82,312	28,110	58,322	8
North Holland..	467,733	289	18,943	15,194	36		2,989	2,622	199		5,740	5,423	513	27,656	23,169	50,835	9
Zeeland.....	189,915	139	10,597	7,377					15		963	556	153	11,559	7,933	19,492	5
Utrecht.....	154,419	80	6,479	5,818	23		2,472	1,906	47		1,923	811	150	10,174	8,125	18,299	4
Overijssel.....	246,837	344	22,010	16,962	3		89	109	11		284	259	538	22,353	17,390	39,743	6
Friesland.....	212,040	209	17,627	13,547	7		288	866	15		1,187	809	291	19,152	16,722	35,874	9
Groningen.....	189,714	105	16,347	13,276	19		1,173	911	34		2,325	1,750	248	19,545	16,987	36,532	6
Drenthe.....	81,258	139	6,267	5,471	4		54	49	7		170	129	139	6,491	5,640	12,131	4
Limburg.....	203,047	161	9,195	7,219	2		217	6	48		1,069	1,278	211	10,481	8,503	18,984	7
	3,653,984	2,410	179,760	140,657	163		12,522	10,917	639		20,208	18,411	3,214	212,485	169,885	382,370	477

* If to number of children (382,370) attending Public and Private Schools, which are strictly Elementary, there be added 1,800 scholars who were attending the "Latin Schools," and 1,800 scholars who were attending the Universities, we have 385,470 young persons receiving education, or one in every eight of the population.

† Several of these districts are again subdivided, and over each of these districts and subdivisions a permanent Inspector presides, and directs its primary education. So that there are 80 thoroughly efficient Inspectors, who are appointed by the government and paid for their services, and who report annually to the Inspector-General, and through him to the Minister of the Interior.

PRIMARY SCHOOL

AT

THE HAGUE, HOLLAND.

THE following description of a Primary School at the Hague, with some remarks on the classification of public schools is copied from Bache's "*Report on Education in Europe.*"

The definition of a primary school, as given in one of the regulations issued to complete the law, covers a wide field. According to it, a primary school is one in which youth is instructed in the first principles of knowledge, such as reading, writing, arithmetic, and the Dutch language, or the more advanced branches, such as the French, or other modern languages, or the ancient languages, geography, history, and other subjects of that description. There are several different kinds of schools, corresponding to different grades of instruction in these branches. Infant school instruction is included in the primary department, but it is not yet fully developed.

The lowest schools are those for the poor, (*armen-scholen*) and which are entirely gratuitous. The children enter at from six to seven, and from twelve to fourteen. As supplementary to them are evening schools, principally intended for revising former courses, and which should be attended until sixteen or eighteen years of age. As the attendance in these latter schools is not obligatory, the proportion of those who receive instruction in them, varies much in different localities.

The next are called intermediate schools (*tusschen-scholen*) in which the pupils pay a trifling fee.* Both these are, in general, public. Some have been established by the school committees, and after a few years have become self-supporting. The grade of instruction is rather higher than in the schools for the poor, but as the law does not prescribe any particular programme, it varies much in the different parts of Holland—a school which would be called intermediate in a small town, ranking below one of the gratuitous establishments for the poor, in one of the chief cities. The amount taught, depends, other circumstances being the same, upon the average age to which the children remain at school, and therefore varies also in different parts of the kingdom.

The next grade, or burgher school, (*burger school*) is, in general, a private establishment. It is distinguished from both the classes just enumerated by a larger fee,† and in general, by a higher grade of instruction; but while, in a single town or district, it is easy to perceive this gradation, yet it is scarcely possible to observe it on a comparison of the country at large. In some places, the last mentioned school is called the Dutch school, to distinguish it from the following class.

The school denominated the "French School," is the highest of the primary division, and is, in general, a private establishment, though frequently of the kind classed by law with private schools, but superintended in reality, by the local school committee itself. Besides the branches taught in the other schools, the courses of this embrace the French language, of which the pupils acquire a grammatical knowledge, and which they are enabled to speak with considerable facility. These schools prepare their pupils for entrance into active life, and serve also in some degree as feeders to the grammar or Latin schools. The instruction

* For example, in an intermediate school at Rotterdam, which I visited, eight cents a week.

† The school fee at the burgher school at Haarlem is between six and seven dollars a year.

in French is not, however, an exclusive mark of this grade of institution, as the descendants of the French emigrants, constituting the Walloon congregations, continue the teaching of this language in the gratuitous schools for the poor, connected with their churches.

While, in point of fact, there is not the regular fourfold division of primary instruction which thus appears, it is difficult to draw a separating line. The intermediate school connects the school for the poor, and the burgher school, while, in the burgher schools, the same branches are studied as in the French schools, except the French language. The less number of children under the charge of one master, the greater age to which the children in general remain at school, the generally greater capacity of the master, from the higher salary which his talents command, the greater family culture of the children before coming into and while in the school, render the average progress in the burgher school of a given place, superior to that in the intermediate school, and in this latter higher than in the school for the poor. I must say, however, that in more than one case, in the same place, I could detect no difference in the school itself, between the intermediate and the burgher school, except in the greater comfort of the accommodations of the latter; and I have already remarked that, in comparing the establishments of different places, the name is not an accurate guide to the grade of the school.

A sketch of the arrangement of the primary schools themselves would, I have thought, be rendered more compendious, without injury to its fidelity, by selecting for particular description one of the schools for the poor, which, as a class, rank higher in Holland than in any other of the European States, and engrafting upon the account of this, remarks on the methods of other schools; concluding by a brief statement of the particulars in which the intermediate, burgher, or French schools differ, in general, from the assumed type, or from each other.

Before doing so, however, there are some points fixed by the school regulations, which require notice. The first is, that the system of instruction must be that called simultaneous, or in which all the pupils of a class take part at once. In practice, this requires to be varied by questions adapted to individuals, and the classes, therefore, must not be too large. In the intermediate schools I found, more commonly, classes of from thirty to fifty, the lesser number being well adapted to the method. With a well trained master, and a class of moderate numbers, this kind of instruction is the most lively that can be imagined, and when judiciously varied, by questions put to all, but which only one is permitted to answer, it is also thorough.

The method of mutual instruction is not at all favored in Holland. A very decided and general opinion against it, appears early to have been brought about by the comparison of the English schools with their own. A prize was offered for the best dissertation on the subject, by the society for public utility, and taken by M. Viesser, inspector of primary schools in Friesland. This excellent dissertation, which was published and widely distributed by the society, no doubt contributed to form or strengthen the opinion which prevails at this day.

The only approach to the monitorial system in the schools of Holland, is, that pupils who have an inclination to teach and who will probably become teachers, are put in charge of the lower classes of a school. Thus, also, some of the best monitors of the Borough-road School in London, are boys who are likely one day to follow the career of teaching. There is, however, a very wide difference between the use of a few apprentices to the profession, and that of a large number of monitors to give instruction. I had occasion to observe, however, that in many cases there was a want of life in the younger classes entrusted to these inexperienced teachers. If they are to be used, it would be better to employ them in classes which have some training, even though nearer the teacher's age and attainments.

The next point is in regard to religious instruction in the schools. There is unbounded toleration of religious creed in Holland, and while the necessity of religious instruction in the schools has been strongly felt, it has been made to stop short of the point at which, becoming doctrinal, the subjects taught could interfere with the views of any sect. Bible stories are made the means of moral and religious teaching in the school, and the doctrinal instruction is given by the pas-

tors of the different churches on days appointed for the purpose, and usually not in the school-room.

The last point is in regard to the choice of school books. The publication of them is not left to open competition. Every book, before it can be used in a public school, must be submitted to the examination of the minister of the interior, acting, of course, by deputy, and if approved, is admitted to the list of books which may be used in the schools. From this list, the provincial board of primary schools select those which they consider best to be used in their province, and from their list the teachers choose such as they approve. In private schools, the teacher selects his own books, but he must report a list of them to the inspector.

There are two normal schools for the education of teachers for the primary schools, one at Groningen, established by the society for public utility, the other at Haarlem,* by the government. Formerly, all instructors were prepared in the different primary schools. They began to teach as early as twelve years of age, attending the evening school to make up their loss of time during the day. At sixteen, they had served their apprenticeship, and were admissible to the fourth grade of teachers. This method prevails still to a considerable extent, but as it has been found to produce rather routine than intelligent teaching, the two normal schools have been established to supply the defect.

The material of elementary intellectual instruction consists in most countries, of reading, writing, arithmetic, and a knowledge of the mother tongue, to which the geography of the country, and sometimes general geography, natural history, linear drawing, and vocal music are added. Special exercises of the perceptive and reflective faculties are also included in the more improved intellectual systems. While the material is thus nearly the same, nothing can be more different than the results produced by the schools, according to the use which is made of it. In some, the means are mistaken for the end, and if the pupil is enabled to read, write, and cipher mechanically, the school is supposed to have done its duty. In others, these branches are employed as the means of developing the intellect, as well as for the communication of useful knowledge; according as one or the other view is taken, the instruction is arranged in conformity with it. In Holland, the intellectual methods of Pestalozzi have taken deep root, and the enlightened state of public opinion, in regard to elementary education, prevents, in a great degree, a mechanical system of teaching.

The plan of the school for the poor at the Hague, to which I now proceed, will justify this remark. To render it clear, I shall, even at the risk of dwelling rather long upon it, present first the essential features of the instruction; next show the chief steps in the entire course, from which a just idea of the character of the whole of it can be formed, appending to this, some remarks upon the methods of teaching, and the text books. Then, by separating the exercises of the classes, and attaching to each the number of hours devoted to it per week, I shall show that this is no theoretical programme, but one formed for practice; and this will further appear, by stating, in conclusion, some of the results which I witnessed at an examination of the pupils.

This school, I should remark, though ranking with the best of those which I saw in Holland, is not distinguished above several others of its class, and in its intellectual character, seemed to me decidedly below many of the intermediate schools, where the pupils are less numerous. It is therefore no exaggerated statement of what is obtained between the ages of six and twelve or fourteen. The subjects of instruction, including intellectual and moral, are—

Exercise of the perceptive and reflective faculties. Learning to read according to Frisen's method, including the spelling of words and the analysis of words and simple sentences. The composition of simple sentences with printed letters. A knowledge of the different kinds of printed and written letters. Writing from dictation for orthography. Correct reading of prose and poetry. Grammar of the Dutch language. Geography of Holland. History of Holland, including its chronology. Writing, beginning and ending with writing on the blackboard. Linear drawing. Arithmetic by induction. Mental and written arithmetic, with a knowledge of the Roman numerals. Practical Arithmetic, to decimal fractions inclusive. The theory of numbers. Moral and religious instruction. Vocal music.

* Established in 1816.

As natural history does not appear either in this programme or in others of primary schools, I was at the pains to ascertain if any thing was taught in relation to a branch so eminently calculated to promote early religious impressions, and found that incidentally information was given on the habits of animals, and some of the phenomena of the physical world. It will be observed that in this school, as in general, physical training forms no part of the system. In Holland, the gymnastics, so popular in Northern Germany, have never been permanently introduced, even in the boarding-schools.

The nature and extent of the instruction in the branches enumerated above will be best understood by the following list of progressive exercises :—

1. Exercises of thought, reason, and intelligence.
2. READING. Prinsen's Reading Tables. Vowels and consonants from the letter-box. Composition of words on the reading-board. Explanation of words and simple sentences. Spelling from memory. Exercises in reading different printed and written characters. Simultaneous reading from a series of books graduated to the capacity of the class. Explanation of words met in reading. Composition of sentences on the reading-board. Writing from dictation for orthography. Correct reading. Composition of simple sentences.
3. GRAMMAR practically. Conjugation of verbs, &c. Parsing.
4. HISTORY of Holland and chronology.
5. GEOGRAPHY of Holland.
6. WRITING. Elements of writing on the blackboard. Writing on slates. Writing of numbers. Linear drawing. Writing on paper. Writing capital letters and large hand. Exercises of writing on the blackboard.
7. ARITHMETIC by induction. Mental arithmetic. Reading Roman numbers. Practical Arithmetic. Tables of moneys. Exercises in reading numbers. Decimal fractions. Tables of weights and measures. Theory of arithmetic. Elements of form.
8. MORAL AND RELIGIOUS instruction. Bible stories, &c.
9. SINGING.

In giving a short explanation of the exercises just enumerated, I shall not confine myself to the methods followed in this particular school, with all of which indeed I am not acquainted, but give them as in most general use, especially as I saw them practiced in the schools of Haarlem, which have the advantage of immediate contact with the seminary for teachers there, and the use of its pupils as sub-teachers.

The exercises of perception and reflection in frequent use, are those recommended by Ewald, and consist of a selection from various authors, as well as of many subjects on which the teacher is expected to be informed. The instruction is given orally, according to the following outline : The child is taught to observe and to speak correctly, by referring to objects which are about him. Knowledge of colors. Of some varieties of form, as round, square, &c. Naming of words of similar and contrary significations. Meaning of verbs in common use. Numerating by cubes. Knowledge of coins of the country, and their relative values. Division of time. To tell the time by a watch. To distinguish the true from the false. Questions on nature and art. Qualities of resemblance and distinction. Compound expressions, as "good day," "besides," &c. Witty sayings. Points of the compass. Lessons on weights and measures. On different metals. Articles of furniture in common use. Different daily occupations. The four ages of man. Different ranks of society. Proverbs and phrases. Riddles and charades. Fables. Honorable and dubious actions. Explanation of words.

Systems, in my opinion better than those of Lohr, are in use in Germany, but this enumeration shows what in general these exercises are in the Dutch schools.

The arrangements for teaching reading, according to Prinsen, are a spelling and reading-board, to be presently described, reading tables or progressive lessons printed and pasted upon boards, and a series of reading books, beginning with the simple vowel sounds, and rising to stories for children, who have a facility in reading. There is a manual also for the teacher to guide his lessons. The reading-board consists of a center-piece with horizontal grooves, or raised ledges forming grooves between them, into which small wooden prisms, having letters marked, or printed letters pasted upon them, may be placed. The vowels are arranged in compartments on one side of the center-piece, and the consonants on the other. The letter prisms have the same letter in different characters, capitals and small letters on four faces of the prism. This reading machine admits of a great variety of exercises in the mechanical arrangements concerned, in which the pupil takes part, such as composing simple words and sentences, and forming words from the letters composing them, which have been purposely disarranged.

The reading tables of progressive lessons are for the purposes of varying the exercises, of employing a number of children actively at the same time, and for habituating themselves to letters of the ordinary size. They are nine in number, beginning with single vowels, and terminating with words containing several compound sounds. All the combinations of letters used form words, as in Mr. Wood's plan, and the teacher is careful to require an explanation of every word, as it occurs. Prinzen's Primer enables the teacher to exercise the intelligence of his pupil, and to give a pleasing variety to his instruction. There are pictures attached to each letter, representing some object or action, the word referring to which contains the vowel sound to be taught. The teacher draws from the pupil a description of the object or action, and when he has obtained the right word, makes the child remark the sound of the letters. Of course, these sounds are not the arbitrary names of the letters, and hence, this method, to distinguish it from the spelling method is called "Phonic," (*l'autir*.) The reading-machine and primer are used in conjunction. When the pupil has reached the "first reading-book," the teacher reads aloud, that the former, by following, may receive ideas of emphasis. The reading-books contain stories entirely adapted to the comprehension of children, giving them ideas of common trades and operations, of moral sentiments, of nature, of the biographies of the worthies of Holland, familiar letters, &c. They contain various forms of printed and written alphabets.

In learning to write, beginning upon the slate or board, one of the pupils composes a word upon the reading-board, with written letters; then, all name the sounds, and copy the forms upon their slates. In some schools, elementary forms are first taught, and the letters of large hand next written. In others, small hand is made the basis; and in the school for the poor, at the Hague, the teacher has ingeniously sifted out the elements of a current small hand, and begins with them. From the best examination I could give these methods, it appeared to me that the hand begun by small letters was not so good as that begun by large ones.

A specimen of the method of teaching geography will be seen by following the outline of Prinzen's description of Haarlem, used as a guide to the teachers of that place. It begins with the elementary notions of the manner of representing a country on a map, the points of the compass, &c. Then follows the position of the town, its size, and the character of its environs, number of its inhabitants, most remarkable buildings, the divisions of the town, the gates, principal canals and streams, principal streets, and particulars relating to remarkable buildings in them, and minute descriptions of the more important places in the several wards, from the first to the sixth. After thus becoming acquainted with the geography of the town and its environs, that of Holland follows. In some schools, the old method is still in use.

Arithmetic is chiefly taught according to Pestalozzi's method, cubical blocks being used for numeration. These have been superseded in some countries, by the arithmetical frame spoken of before, which answers the same purpose of addressing the eye, while its use is more convenient than that of the cubes. The method is by induction. The first lesson teaches to combine three units, variously, by addition. The second, to reckon these forward or backward. The third, to name them from the middle. Then, ideas of comparison, as of greater or less numbers, up to three units. Of differences, of how many times unity must be repeated to make two or three, or elementary ideas of subtraction, of multiplication, and of division. The same course of lessons is repeated, increasing the number of cubes (units) up to ten. Next follow ideas of even and uneven numbers, and of the result of their combination, reaching as high as fifteen. Counting by units, by twos, by threes, and following the same steps as in the earlier lessons, counting by twos and threes, by ones and threes, &c., and always repeating the same train. A similar course is followed in reckoning up to twenty, adding counting by fours, by threes and fours, by twos and fours, by ones and fours, and a similar series by fives. This course is kept up as long as necessary, and from the insight it gives, from the very beginning, into the theory of arithmetic, a judicious teacher will be amply repaid for the somewhat tedious repetition of the earlier steps, by the facility of the latter progress. The various exercises in arithmetic are fully detailed in the programme of the Hague school, already given. The elements of form are also taught according to Pestalozzi.

The results of the moral and religious instruction, communicated in and out of school, are fully shown in the character of the people of Holland; and these must be deemed satisfactory. Sectarian instruction is carefully kept out of the schools, while the historical parts of the Bible and its moral lessons are fully dwelt upon. There are various collections of Bible stories for this purpose, which are commented on by the teacher, and all the incidental instruction, so important in a school, has the same tendency. Doctrinal instruction is given, according to an arrangement made with the churches of the various denominations when the school law was promulgated; this instruction is imparted out of the school, on the half-holidays and Sundays. Sometimes, when, as at the Hague, the pupils nearly all belong to one communion, a catechist attends at the school; but even then, only those children whose parents wish it are present at the exercises.

Music is taught by note, and most of the schools have a blackboard, with the ledger lines painted in white or red upon it, to assist the teacher. The songs are of very various characters, as moral, religious, patriotic, grave, gay, and loyal; and very considerable attainment is made in vocal music.

I return now to the school of the Hague, to give an account of the manner in which the various exercises are accomplished, within the six or eight years devoted to elementary instruction. As the law requires but three classes in each school, these are sub-divided. Each division is, in fact, a separate class, with a distinct course of study, and an industrious pupil can pass through one division each year. The number of hours marked, are those devoted per week to the several subjects.

FIRST, OR LOWEST CLASS.

FIRST DIVISION.

	Hours.		Hours.
Exercises of thought and reason,.....	2	Individual reading,.....	1
Prinsen's Tables,.....	6	Reading different printed characters,.....	1
Vowels and consonants from the letter-box,.....	1	Mental arithmetic,.....	1
Composition of words on the reading-board,.....	3	Exercises in arithmetic,.....	3
General exercises with the letter-box,.....	1	Learning Roman and Arabic numerals,.....	1
Spelling from memory,.....	1	Sitting quiet,.....	1
Explanation of words and sentences,.....	2	Exercises of thought and reason, continued,.....	3
Simultaneous reading from books,.....	4		

SECOND DIVISION.

Vowels and consonants from the letter-box, continued,.....	1	Reading written characters,.....	3
Spelling from memory, continued,.....	3	Writing on the blackboard,.....	1
Explanation of words and sentences, continued,.....	3	Arithmetic by induction, continued,.....	1
Simultaneous reading from books, continued,.....	7	Mental arithmetic, continued,.....	1
Composition of sentences on the reading-board,.....	1	Writing and reading numbers,.....	3
		Reading Roman numerals,.....	1
		Elements of form,.....	1
		Sitting quiet,.....	1

THIRD DIVISION.

Exercises of thought and reason, continued,.....	2	Writing out verses to learn by rote,.....	1
Spelling from memory, continued,.....	1	Linear drawing,.....	1
Explanation of words and sentences, continued,.....	1	Arithmetic by induction, continued,.....	1
Simultaneous reading from books, continued,.....	7	Mental arithmetic, continued,.....	1
Composition of sentences on the reading-board, continued,.....	1	Practical arithmetic,.....	1
Writing on the blackboard, continued,.....	1	Writing and reading numbers, continued,.....	2
Reading written characters, continued,.....	1	Reading Roman numerals, continued,.....	1
Grammar, the conjugations,.....	1	Elements of form, continued,.....	1
Writing on slates,.....	1	Table of coins,.....	1
		Catechism,.....	1

SECOND CLASS.

FIRST DIVISION.

Exercises of thought and reason, continued,.....	2	Writing small hand on paper,.....	3
Analysis of sentences,.....	1	Mental arithmetic, continued,.....	1
Explanation of words and sentences, continued,.....	1	Practical arithmetic, continued,.....	3
Composition of sentences continued,.....	1	Table of coins, continued,.....	1
Simultaneous reading, continued,.....	5	Elements of form, continued,.....	1
Correct reading,.....	1	Linear drawing, continued,.....	1
Parsing,.....	1	Moral and religious instruction, continued,.....	1
Writing on slates,.....	2	Singing,.....	1

SECOND DIVISION.

Hours.	Hours.
Exercises of thought and reason continued.... 1	Geography of Holland,..... 1
Simultaneous reading from books, continued. 5	Arithmetic by induction, continued,..... 1
Correct reading, continued,..... 1	Mental arithmetic, continued,..... 1
Composition of sentences, continued,..... 1	Practical arithmetic, continued,..... 3
Writing on the slate, continued,..... 1	Rules of arithmetic,..... 1
Writing on paper, continued,..... 4	Decimal fractions,..... 1
Writing capital letters,..... 1	Elements of form, continued,..... 1
Linear drawing, continued,..... 1	Moral and religious instruction, continued,.... 1
History of Holland,..... 1	Vocal music, continued,..... 1

THIRD CLASS.

Exercises of thought and reason, continued,.... 1	Writing on blackboard,..... 1
Simultaneous reading, continued,..... 1	Mental arithmetic, continued,..... 1
Correct reading of prose and poetry,..... 1	Practical do. do. 4
Writing from dictation, for orthography,.... 2	Rules of do. do. 3
Grammar, continued,..... 1	System of weights and measures,..... 1
History of Holland, continued,..... 1	Theory of numbers,..... 1
Chronology of Holland,..... 1	Moral and religious instruction, continued,.... 1
Geography of Holland,..... 2	Catechism, continued,..... 1
Writing of small hand from copy slips,..... 2	Vocal music, continued,..... 1
Writing capital letters and figures,..... 1	

The half-yearly examination of the pupils, at which I was present, enabled me to hear their progress in arithmetic with the cubes, in reading and spelling, in forming words and sentences, in numerating written numbers, making Roman numerals, in higher reading, in the elements of form, in higher arithmetic, in mental arithmetic, in the geography of Holland, and in vocal music. Their attainments in these branches were, in general, quite respectable, and in some of them very satisfactory indeed.

The system of weights and measures is taught in the schools of Holland, not only by learning tables, but by reference to the standards themselves, a complete set of copies of which is expected to be preserved in every school. The advantages of this method are very great.

The branches taught in the schools for the poor, are carried further in the burgher schools. Thus the course of grammar is extended, and general history and geography are added. The essentials are, however, the same, and there is no new train of study.

The instruction in the so called, French schools, may be illustrated by that in the one established by the school committee of Utrecht. This school consists of three divisions: two for boys and one for girls. Of those for boys, the first is a Dutch elementary school, which takes its pupils at about five years of age, and carries them through a course very similar to that already described.* At from ten to eleven, they pass to the French school. Here they make further attainments in the Dutch language, study general geography and history in detail, carry their arithmetic further, and begin algebra, continue the course of geometry, make greater progress in the theory and practice of music, and above all, study the French language grammatically, and by using it as the language of recitation, and learning much of the other branches through its medium, acquire a great facility in speaking it. In some of these schools, physics and natural history are taught, and Latin is begun by those who intend to enter the grammar school.

* I was much pleased to see the method of teaching geography, by delineating maps on the blackboard in use in this school. The master himself must be practiced in the art, in order that the pupils may learn by imitation.

XII. SCHOOL DISCIPLINE.

PLAN OF INSTRUCTION; PLAN OF LABOR.

Translated from Deisterweg's "*Manual for Teachers*," for the *Am. Journal of Education*.]

SECTION I.—SCHOOL DISCIPLINE.

CAN we hope for a conclusive discussion of school discipline?

Many teachers have occupied themselves on the subject, and there is no end to their discussion on it. We have not thought proper to devote to it an extended chapter, for the very plain reason that we do not consider it a separate, independent department; but as one and the same with instruction. In our opinion, it coincides with didactics; and, if not identical with it, is still a consequence of it. The true didacticist is also a disciplinarian; he who holds clear views as to instruction, does the same as to discipline; he who instructs well, disciplines well; subjects of instruction are, according to the ancient but often forgotten opinion, "disciplines."

These views—which it would be easy to extend—were not received so long as the old dogmatic way of teaching was recognized as the sole duty of the teacher. Then, a man might know much, speak well, and "teach" well, and yet know nothing of maintaining discipline. Such (to mention a name whose reputation will not be injured by it) was Schleiermacher, at the Gray-friars' Gymnasium, at Berlin; and such were many other learned men, even down to the present day. But since we have come to include in the idea of teaching something more than, and indeed something entirely different from, the mere communication of knowledge—namely, to stimulate, to develop, to lead into a condition of independent activity; in a word, to instruct, according to the rational modern meaning of the term—since this has been the case, there have been no longer good teachers who have not understood how to discipline their schools. As far as his capacity and power of instruction go, just so far do his educating power and efficiency go. Whoever agrees with the previous positions in this book will agree with this assertion.* The schoolmaster of the present day does nothing except to teach, from one day's end to another. He is entirely a teacher, and is therefore with propriety called by that name and by no other. It is not an arbitrarily invented name,

* Compare this: "Discipline is not the art of rewarding and punishing, of making pupils speak and be silent; it is the art of making them perform, in the most appropriate, easy, and useful manner, all the duties of the school." The definition of "school discipline," by the Conference Society of Capellan, (see above,) is evidently too broad. "The elementary school ought, by the spirit ruling within it, and by its instruction, so to operate upon the children that they shall receive a preparation, adapted to their ages and capacities, for temporal and eternal life."

which may be exchanged for a better. The ancient "schoolmaster" has nowadays advanced to the grade of "teacher." As teacher, he calls into activity the observation, industry, love of learning, capacity for it, power of language, capacity for independent action, and self-control of his pupil; all his faculties, not merely those of acquiring knowledge, but the feelings and the character. That is, he directs, corrects, and disciplines him, outwardly and inwardly. The pupil attends school. Here, order, propriety, morality, good manners, obedience, regularity in coming, going, standing, and sitting, and in preparing and delivering his work, love of his occupation, his teacher, and his school, and also truthfulness and credibility, appear as the consequences of the influence of the living, educating principle of the school; that is, of a teacher whose intellect and will are active, vivid, and strong; who, just as Schiller composed, philosophized, and labored as a character, does every thing, inspires every thing with character. The whole matter of disciplinary means therefore concentrates itself in this requirement from the teacher. Teach with didactical—and consequently also with disciplinary—power and skill. The principle of teaching is the principle of school education.*

Thus it appears that the teacher, while bestowing attention upon his system of instruction, must also pay attention to whatever outside matters relate to it, must adjust his views and practice as to them, and must cause his scholars to conform to them. And in like manner it is self-evident that, where several teachers are laboring together in one school, there must be an agreement upon subjects of this kind, that there may be a harmony of action among them, and one may not pull down what another builds up. The right spirit of instruction will lead the teacher to right action. Shall we go into particulars under this subject? Their name is legion—but we will refer to a few.

1. Strict enforcement of regularity in teaching school, neither too soon nor too late, but before the stroke of the bell. The teacher therefore to be in the school before it is struck. This is indispensable. Any one coming late to remain standing during the first hour, and to go to the foot of the class.

2. Pupils to be quiet in their places, and to be quiet while preparing their lessons.

3. Exercises to commence at the stroke of the bell, with singing or prayer, or both, but briefly. One stanza of a hymn is enough. Unprogressives have all or half of a hymn sung. But the object of singing is to be a stimulus for work.

4. Position of the teacher before the class, at his post; not to be wandering about. To see all, to address all, to question all, to stimulate all, as one man.

5. Indication of readiness to answer by lifting the forefinger or right hand, not the arm: one to be selected to answer.

* Curtmann gives, as the principal requisites of a teacher as disciplinarian, watchfulness, love of order, consistency, and fairness.

6. Such one to stand up and speak in a clear, distinct, definite, strong manner. No error, stammering, slowness, half-answer, or slothful answers to be allowed. No telling—that school-pest! Why?

7. For repetition, the pupils to leave their places; not otherwise. The teacher who always needs this means of stimulating the attention is fond of ease, or a feeble teacher.

8. Recognition of every endeavor after success, according to the amount of effort, even if the results are small. Such recognition encourages; while blame, especially if undeserved, is prostrating.

9. No moralizing. Give brief and clear orders, laconic praise* and blame. The laconic teacher is the best.

10. Patience with the feeble, unweariedness with those who try, peremptoriness with those who do not do all they can.

11. The pupil's eye to follow his teacher as a planet the sun, or as a satellite its planet. This must happen of itself, or else it is a made-up action, and valueless.† Erect but not stiff carriage of the body, the feet to be kept still, the hands off the table.

12. Pupils to leave school quietly and orderly, before the teacher, with a silent salute to him; and to go quietly home.

Will this dozen of hints be sufficient? Must we instruct the teacher how the scholars should behave when a stranger, or the pastor, or a school-inspector, &c., visits the school? or how to meet the complaints of parents? or how to punish, with what, whether with a stick, and a thousand other questions? Where should we end? Those desiring information on those points, should study the books already named, on school discipline, especially that of Dobschall. As seeking the kingdom of God is the first thing, and to be replaced by nothing else whatever, and guides into all truth, so does a right spirit in teaching lead to right action. This, accordingly, is what the teacher should endeavor after. Without it, all else is wood, hay, stubble, which the fire will consume. With it, it is impossible to go wrong, although "man errs so long as he struggles" it is true; but he will not, on the whole, ever fail of the right way. Experience purifies and directs. Not all things are for all. "Though two do the same thing, it is not the same;" and this is true both of delinquent scholars and of disciplinary teachers. "No one thing is suited to all." What one man applies with success, will fail in the hands of another. There is no receipt-book for the thousand and thousand cases which arise in discipline. "What the understanding of no wise man sees, childlike feeling will practice in simplicity." These teachers are born rich. Others learn from them, by their example, by observ-

* Praise, that is the approbation of some respected person, (*Laudari a viro laudato*), elevates the soul, and encourages it to noble sentiments. See Jean Paul Richter's "*Life*," iii., 13: "Even the greatest minds, however much consciousness of power and self-reliance they may have, still sometimes, even from their youth up, feel the need of an encouraging recognition of their talents, and of the successful application of them. The estimate of others is indispensable to a man's correct appreciation of his own worth." Every teacher who educates should continually remember this. The Hamburger, Gurlitt, is a model.

† "A made-up educated man is the most foolish creature under the sun."—(Bettina.)

ing them. "Demonstration goes beyond study." The best work is done by a firm character, a will directed toward good. To this end have we "Moses and the prophets." And in this also all depends upon the spirit of the work. A right spirit leads to right thoughts; as is the former so are the latter.

Of means of punishment* we prefer to say nothing at all. They are mostly useless and unnecessary; where the instruction is of the right character, i. e., adapted to nature and to the subject. The pupil should study in the school, and with pleasure. Where this is the case, there will be few or no improprieties; where it is not, the teacher will be constantly obliged to make rules and inflict punishments, but without the result desired. For the design of punishment is to do away with punishment. But both punishment and delinquency are avoided by love of the pupil's work. And this love of the work† must be produced by the work itself. A consciousness of constantly growing powers continually stimulates the desire of their development. The principle of instruction is the principle of education; the method of instruction is the method of education.‡ Where this is not so, but where the two do not coincide, and where, thus, the instruction is not in and of itself educating, but only instructs—communicates knowledge—there there is no real education. Those not clear on this point should study the work—which I can not sufficiently recommend—of Weiss, "*Experiences and Counsels*," (*Erfahrungen und Rathschläge*,) 2d vol. The result of his excellent discussion of the subject is concentrated in the following statement. "Instruction, in order to develop into independent action and fitness for actual life the whole mental powers of the student, as a being of senses and reasoning powers, should first of all endeavor to stimulate and bring into full activity the feelings, as the central point of, and means of operating on, all the mental faculties and their results. Instruction, in order to accomplish this result, should use its material only as a stimulus, should proceed from actual observation of objects of intuition, and should from this develop within the pupil's mind the idea of those objects. By this method only can the inner nature be entirely reached, a true interest in the subject of study excited, and the understanding and will (head and heart) alike cultivated, and consequently the individual educated by means of education."§

* The right of punishing minors, and of applying necessary constraint to them, needs no establishment. The means used, however, should be of such a kind that it may be certain that "the pupil, if he were to express a reasonable conviction on the subject, would approve them."—Rotteck, "*Public Science*," I., p. 140.

† Young teachers are most concerned about discipline, because they do not understand instruction. And most very learned men, not understanding the latter, do not understand the former. If they should acquire a knowledge of methods, they would learn discipline at the same time. This is exemplified at the teachers' seminaries. Where their pupils are made skillful in instruction, they prosper in all things.

‡ Pleasure—enjoyment—sympathy—in realities, is the only real existence, and the only means of making realities known. All else is vain, and wasted time.—(Goethe.)

§ I will add to the above an extract from the work of a powerful, thoughtful, and experienced woman—(TINETTE HORNBERG, "*Thoughts on Education and Instruction, especially of the Female Sex*," (*Gedanken über Erziehung und Unterricht, besonders des Weiblichen Geschlechts*).

ADDITIONAL.

The preceding chapter is a brief one. The following propositions may perhaps serve as useful themes for meditations connected with it.

1. Fichte expresses himself as Weiss did, "*Orations to the German Nation*," (*Reden an die Deutsche Nation*.) Leipzig, 1824, p. 52.

"Even although this mental action is not that from which good morals proceed, and though, to this end, a special direction of that action is necessary, still this love is the universal condition and form of the moral will; and accordingly this species of intellectual training is the immediate preparation for moral training."

2. A good teacher must always maintain his discipline with a strong hand; although it is a secondary object, and not a primary one. The only primary object is instruction. Discipline is the outward strength of armies; learning is the strength of the scholar.

3. Discipline is an adjustment from without; cultivation, from within. Nor is discipline civilization. Neither discipline nor any particular degree of civilization necessarily excludes a state of external barbarousness. There are barbarians who are disciplined and civilized.

4. "Instruction is divisible into two kinds; either educating or purely instructing. When the teacher instructs, confining himself strictly within his science, strictly within his objective method, this is pure

chlechte.) Berlin, 1845 Enslin. A work which I urgently recommend to parents and teachers. P. 262:—"*I would, on the contrary, for my own daughters, (if I had them,) search the world over for a good teacher, and would rather they would remain deficient in any thing else than in this. For if I should succeed in obtaining a good instructress, in my sense of the term, I should also have obtained a good educator. But here also I come into open opposition to Herr Schulz. He pronounces it an error to take as synonymous the ideas of 'Art of Education' and 'Art of Instruction.' With reference to the male sex, I will express no opinion on this point, although I entertain a distinct one. But it is my conviction—and one not to be shaken—that, for girls, no distinction can be made between these, but that each is indissolubly implied in the other. This is no theory constructed by me in the air, over my writing-desk; it is the result of twenty years' practice—of an experience which can not be annihilated by the acutest discussions of the learnedest men. But what is that which is called education? I will permit Herr Schulz himself to answer. It is 'To guide and accustom young minds to the true, the noble, and the beautiful; to propriety, modesty, and elegance.' I will, for the present, accept this definition, though it is too narrow for me, and under it would inquire of my own past pupils, whether most of the advantages included under it, which they gained through me, did not proceed from the hours of instruction. I have already had oral or written testimony from many of them, that that very species of instruction which Herr Schulz thinks us (women) unfit to give, viz., religious instruction, exercised an influence upon their views and feelings, to which they principally owe whatever of good there is in them, and which is still an active and efficient principle within them. It was especially during the instruction which I gave my pupils in religion, (I called it instruction in Christian duty,) in history, mythology, natural history, &c., that I found opportunities of awakening in them, in a manner the most simple and natural, and adapted to their capacities, ideas upon the glorious destiny of man in general, and of woman in particular, upon the holiest duties of both, upon the great happiness of an existence devoted to the service of what is truly good and beautiful, upon the inestimable value of a truly childlike relation to God, upon real human greatness and virtue, upon that most difficult and rare art, of living a beautiful and noble life—in a word, upon all that concerns the true worth and happiness of man;—ideas whose germs lie slumbering within most minds, but which are often not strong enough to bring themselves to the birth, but demand a Socrates to arrest them and bring them forth into the clear light of intelligent freedom."*

instruction; as in the universities, &c."—Prof. Braubach, in "*Mager's Review*," May, 1843.

I do not agree with this statement. All instruction has an educating effect; is at least intellectually educating; that is, it renders definite the thinking faculties, and gives consistency of thought, thus working indirectly upon the will. Instruction which did not do this would be a mere mass of notifications, not worthy of the name of instruction.

5. School discipline, like instruction, will take form from the qualities, especially the temperament and character of the teacher. The foremost influence should be love to the vocation and the pupil; next, and with these, comes strictness in fulfillment of duty, faithfulness in small things, and from them love of justice. On the latter point Doederlein—"Ad-dresses and Essays," (*Reden und Aufsätze*), Erlangen, 1843, p. 235—has some very true and acute remarks.

"The reputation of strict fairness and its closest expression, unconditional impartiality, is the first fundamental requisite of efficient school discipline. What I mean is, that the teacher must, from the first, be so impreguably established by his whole character in his credit and reputation, as that nothing else shall be necessary to protect him in the practice of entire justice and impartiality. He must absolutely have entire freedom to manage his pupils variously, according to their different individualities; and, both in punishing and rewarding, to follow the higher considerations and requirements of an intelligent prudence and wisdom, without being obliged to apprehend a charge of partiality. He must have reference to variety of talent and temperament, and even of condition and education; (for if two persons suffer the same thing, yet it is not the same.) But all these considerations, let it be observed, should be strictly pedagogical, not at all political; according to the commands of conscience, not the counsels of worldly wisdom."

6. The school is essentially an educational institution; it educates by means of instruction; that is, not merely by communicating knowledge, but by the exercise of the faculties on the material which is the subject of instruction, and the various arrangements which the success of the instruction require. Any one violating these latter, or not applying his individual faculties to the best of his ability, is deserving of punishment. Under this statement come all school delinquencies, (crimes not being here referred to,) including moral ones, such as lying. The school-boy lies, usually, to escape from the punishment of some neglect of work, forgetfulness, &c.; to lie in order to bring a punishment upon his comrade is—to the honor of human nature in boys—a thing unheard of. But, on the other hand, the number of cases where he lies in order to preserve his comrade from punishment is legion.

All delinquencies and punishments in school can thus be brought into connection with instruction and its requisites.

Or they may be considered apart; as moral delinquencies.

Either view is correct; neither excludes the other. The educator will prefer the latter; but most parents, the former, especially the

less judicious. The measures pursued may, in the former case, be referred to the biblical admonition, "Let all things be done decently and in order;" in the latter, to the text, "Train up your children in the nurture and admonition of the Lord."

7. All school punishments are pedagogical; that is, they are intended to improve the child. Theories of deterring, or of retaliation, are quite inadmissible; as is that of any expiation to an offended God. God can not be offended. Men must put themselves on the right terms with him, and with his own conscience, by sorrow and improvement.

That the more strictly religionist (*sogenannte strengglaubige*) or orthodox and pietist teachers find themselves obliged to use a stricter disciplinary practice is a fact. The main reason of this is, the erroneous assumption that God's majesty is offended by every wrong action. No such view ought to be expressed, even in the penal codes. Whether such is the case, must be left to the higher and invisible Judge. Man has no voice in that decision, nor consequently should he have in inflicting a punishment for it. This same class of teachers often, by reason of the same doctrine, see faults and sins where others do not. It is in this case as with the ghost-seers. He who believes he sees them does see them. But the worst thing is when they look upon the child as a reprobate or a criminal. And yet this is seldom a correct opinion, even of such adults as are punished for crimes. "The more we examine men and their errors, the more occasion we shall find to treat them, not as hardened devils, but rather as poor tempted creatures."*

8. "Much speaking is a weariness to the flesh." Many laws, many transgressions. It is enough to frighten one, to read all the rules which are given to teachers. See, for instance, the little work, "*Discipline in the Common School*," (*Die Zucht in der Volksschule*), by Raimund Hermanuz, director of the Catholic Teachers' Seminary at Ettlingen, in the Grand-duchy of Baden. Karlsruhe and Freiburg, 1848. Herder, pp. 48. Catholic clergymen are fond of admonishing and moralizing. In this work we find it advised to make use of tablets of rules, places of honor, golden-books, &c. All pure supererogation! Otherwise, the book contains many good observations. But he must be a poor teacher who needs this army of advice. And *quere*, can such a master in laws and rules ever educate so as to make apt and ready pupils? Such things would leave us to the conclusion that it is better to go back to the old fashion, and find in hard blows one universal means against all kinds of school delinquencies. Lied? the rod. Lazy? the rod. Struck somebody? the rod; &c., &c. *Toujours perdriz!*

9. The Gregorius Strike-hards, in their day, used, "as their daily apparatus for school discipline, a surly countenance, a thundering voice, a litany of terms of abuse, a hard fist, and a tough hazel stick. See Schlez's "*Gregorius Strike-hard*," &c., (*Gregorius Schlaghart*, &c.) Nuremberg, 1818. 8d ed., p. 128.

* *The Prussian Outline of a New Code, and its Relations to the Rhine Country.* (Der preussische Entwurf einer neuen Gesetzgebung und ein Verhalten zum Rheinlande.) By Gottfried Duden. Bonn, 1843. Weber. 62 pages.

The eleventh and twelfth chapters of this book, (which are the best of the whole,) are still to be recommended to many passionate teachers. "Opposites illustrate each other."

10. It is proper here to refer to a new work, in which this subject is discussed in an able manner; viz., "*School Disciplina. Systematised in a simple plan as a scientifically arranged department of knowledge; and briefly and generally discussed from the moral point of view, with direct reference to the practical needs of the teacher,*" (*Die Schuldisziplin. Als wissenschaftlich geordnete Kunde in ein einfaches System; zusammengefasst und aus sittlichem Gesichtspunkten für die unmittelbare Schulantrittspraxis kurs und übersichtlich dargestellt.*) By K. F. Schnell. Berlin, 1850. Wiegand. 123 pages.

II. PLAN OF INSTRUCTION IN A SCHOOL.*

The plan of instruction (*Unterrichtsplan oder Lehrplan*) of a school includes: designation of the matter to be studied; its division into the different grades and classes; fixing the time to be devoted to it each year, week, day, hour, &c. The scheme for the latter is the lesson-bill, (*Lektions-und Stunden-plan*), and is a subordinate part of the general plan of instruction. The plan of instruction sometimes contains more, sometimes less. It may omit any reference to method, which may be left to individual teachers; or it may confine itself to general indications, or may extend to more detailed directions; may prescribe the text-books and class-books in each study, &c. It should include, if not a scheme of directions for studying, (*Lernplan*), at least one for working (*Arbeitsplan*;) that is, such directions that, though the pupil may learn in the course of instruction in each separate study how to do his work in it, each teacher for himself, and all the teachers of an institution containing several, shall be informed what and how much is to be given to the pupils of each age and each class for memorizing, preparation, and repetition, orally or in writing; what is the maximum of time which each teacher may require to be devoted to his department on any given days, &c. There is no need of mentioning minimums, at least in our day; for our present teachers are inclined, not to exact too little from their pupils, but too much.

We add a few details, as briefly as possible, on the chief points relating to a plan of instruction, and their principles.

1. In drawing a plan of instruction for some particular school (for there can be no universal one, nor even a general one for all of a certain class of schools, or none except such as are confined to entirely general principles,) the first consideration is to select the studies. These are determined by the class of the school (whether elementary, common, classical, &c.) and its purpose. This is the first thing to determine.

After determining upon the studies, the next thing is, to lay out the extent to which each of them shall be pursued, and the apportionment

* The plan of instruction is the most important part of the school ordinance or school regulations; which last include the determination of all matters relating to the school, as grade of institution, authorities and teachers, situation, fees, vacation, &c. But, as these are adjusted by local regulations, and usually by the authorities themselves, we shall here confine ourselves merely to the plan of instruction, with which the teacher is concerned.

of them to each class, by half-years, or (which is better) by years. The best courses are arranged by years. The whole extent of what is to be learned by one class, that is within one year, is the year's task for the class, and must be mastered, in order to proceeding into the next class. It will not be found well to carry the specification down to weekly tasks; it will better for the teacher, during each week, to have regard to the task for the year. It will naturally require some years' experience to be able to apportion the weekly work accurately in this way. The individual character of the teacher will also modify the distribution. One will be unable to accomplish what will be mere sport to the other. But on this point personal convenience must be subordinate to the requirements of the study, and not *vice versa*. We can not, however, in this place, discuss the subject of personal peculiarities.

2. The subdivision of the material of each study among the various classes and years is called the course of study (*Lehrgang*.)

The governing rule in this particular is the furthest proposed point of attainment in the school, which is decided by its object as a school.

The distribution of the material to be studied among the various classes proceeds backward from this point, having reference of course to the age of the pupils, and being such that the highest class will reach the proposed furthest point. Subject to this object, the distribution will be adjusted to the contents of each study, in the first instance without reference to any other studies to be pursued by the class during the same time. Only when the extent of the various studies to be pursued by each class has been fixed can their various scopes be compared, and the estimate made whether their total exceeds the capacity of the pupils. The distributions of the various studies thus first made was a provisory one; and the final one can only be made at this point. Further actual experiment will bring any necessary modifications. These will be made, in part, as teachers, books, &c., are changed. Every plan of instruction is, therefore, a provisory one. In this world every thing is temporary. We are all provisory persons, ourselves, and so are all our institutions and works, without any exception. Whether that which is appropriate to-day will be so to-morrow will appear when to-morrow comes. Nothing can claim that it will be appropriate to-morrow merely because it is so to-day. Its suitableness for the morrow must decide for it; nothing else. The dead have no right to legislate for the living. "Only the living have rights."

The following general principles may be stated, for the selection and arrangement of the materials of a study.

a. The most important points should be made most prominent; those less so may follow after.

b. If the time and capacity of the pupils and teachers are sufficient only for the former, then the latter, the less important points, may be omitted, or made entirely subordinate and considered along with the others. The studies, for instance, absolutely indispensable in every common school, even the smallest, are Religion, Reading, Writing, Arithmetic, and Singing. Those not absolutely necessary are all others; such as real

studies, called also studies in useful knowledge, knowledge of forms, drawing, &c. The useful-knowledge studies may, if necessary, be connected with reading, and studies out of the reading-book.

c. Whatever is presupposed in a subsequent study must have been learned in a former one.

d. Related subjects must be attended to at the same time. (See the didactic principles above laid down.)

e. In each successive grade, the powers of the pupil must be exerted, not upon many subjects, but upon few. In a higher school, for instance, two languages should not be commenced at the same time. The successive method should also be used; or rather a successive arrangement.

In arranging the course of a single study, the most important point is the arrangement of materials. As (merely for illustration) in Arithmetic, 1st, numbers from 1 to 10; 2d, from 10 to 100, &c.: in Geography, A, preparatory course—home geography; B, geography proper—including, 1st, mathematical geography, 2d, physical geography, 3d, political—as, a, of Europe, b, of Africa, &c.

The second point in a special course of study is the presentation or management of the materials, either scientific or didactic. The former considers the subject in a purely objective manner, the latter has reference at the same time to the needs or nature of the pupil who is to study; whether he is an elementary pupil, a gymnasiast, &c. Here, also, the method followed makes its appearance: whether analytic, proceeding from a whole to parts; synthetic, from parts to a whole; or genetic, deducing one thing from another. Thus, instruction in language may proceed from sentences down to single sounds (analytic;) or from sounds up to sentences (synthetic;) or by the production of finished and compound sentences from simple ones (genetic.)

On these principles the subjects of study may be distributed according to the different classes of the schools.

8. As to division into classes, and distribution of studies among teachers, the following principles may be laid down:—

a. The younger the pupils the fewer the teachers; and only one where possible.

b. Always one principal teacher, or class-ordinary, for one class, with a principal study; who is to maintain a unity of action in order, discipline, &c.

c. A class system should prevail in every common school, rather than a system by departments of study (*Fachsystem*.)

d. The principal of the school (rector, director) should conduct some lessons in each class.

e. The most skillful teachers should be employed in the lowest classes, and the next most skillful in the highest.

f. A less skillful teacher should be employed in the department he understands best, in several classes.

g. No one should have an exclusive privilege of teaching in one class. The good of the school must be considered before private preferences.

4. With respect to time the following principles may be stated:—

a. Studies and classes should, from time to time, be redistributed in various ways among the teachers. Variety is refreshing.

b. The greatest number of hours should be devoted, not to that study which is in itself most important, but to those which require most time to master them. For example: religious instruction is more important than all other instruction; but it does not follow that a greater number of hours should be devoted to it. The influence of religious instruction is not proportioned to the number of hours devoted to it. Every true teacher is a religious teacher. Religion is not an isolated thing, disconnected from others.

c. Studies requiring most concentration and intense action of the mind from teachers and pupils should be taken up in the first part of the forenoon; though, at the same time, regard must be paid to a proper interchange of subjects.

d. A parallelism between the first and second halves of the week is well enough, but not absolutely necessary.

e. The lesson-bill of a school of one class, with one teacher, will of course differ from one for a school with several separate classes. In the former case, such studies must be entered for each hour as permit the teacher to instruct in one study with one portion of the pupils, while the rest are at work by themselves, or with the help of an assistant. In the latter, a great variety of arrangements are possible, a selection from among which will depend upon the judgment and experience of the teacher of each individual school. There can be no universal rule of proceeding for all cases.

"Yourself is the man;" "Demonstration is better than study." That is, it may be better (for instance) that one division of the school should occupy all of half a given time than that two divisions should together occupy twice as much. Circumstances are frequently decisively powerful, and not to be overcome. In many situations the question must be, not what could be done if the case were so and so, but what can be done under circumstances as they are, which can not be modified? Instruction is necessary, and profitable; but there are also other necessary things. The teacher should not be a weak, still less a narrow-minded, man; who can see nothing except his pupils, and who thinks that the salvation of the world is depending on his efforts, and the salvation of his pupils on their attendance at school.

5. The plan for working (*Arbeitsplan*) should define for each day of a year how much time the pupil in each class shall devote to private study. It is the maximum of time, of course, as was already observed, which must be fixed for each study on each day. The principal points to be regarded in this arrangement may be gathered from the following observations.

a. Nothing should be prescribed for the sake of prescribing it, nor for the sake of keeping the pupil busy—an object which many ignorant parents desire to obtain for every hour; a point which the teacher should

never concede to them—but because this method of study promotes progress, develops the pupil's self-reliance and power of independent effort, and assists him in mastering his materials. The lessons must, accordingly, be carefully selected, and must always be suited to the age and powers of the pupils.

b. The younger and less capable the pupils are, the less able are they to study by themselves at home.

c. The teacher should make the pupil master of the substance of his work, and not leave it to the latter himself; for, as a general rule, he will not be competent. Under the direction of the teacher, and with his mind fully awake, he will learn more than in ten times the same time alone, amongst the interferences or fatigue of home. The school becomes agreeable to thousands of scholars, (and hundreds of thousands of parents,) from the misery which their studies at home inflict upon them. And what is the use of studying in pain and misery? How does it rob the child of valuable time, which he ought to be using in his own sports and in the cheerful company of his parents! Therefore, all labor at home should be confined within a reasonable extent—at present within the indispensable minimum; for the opposite extreme, even in schools for girls (!) is the present tendency. The first question for the teacher to consider at present is, Are these hours of study at home indispensable? Can they be omitted? (God bless this reflection: posterity will thank us for it.)

4. The work for the studies at home must be previously mastered in the school.

It is not enough that a task is prescribed which is reasonable in itself. The pupils must be rendered capable of themselves attaining a perfect mastery of it. How do the poor children torment themselves if they find themselves unable to do this! Therefore, the teacher should show them how to memorize, prepare, recite, write a composition, solve a problem, &c., by going through those respective kinds of work with them. Thus the teacher becomes the true friend of his pupil; a much more efficient relation than that of master. (There are still many teachers who are not, it is true, flogging-masters, but are still prison and torture-masters. In the hands of many teachers, the catechism is a real instrument of torture.

a. The scheme or plan for working should contain directions for a whole week, and every day of it, by name—Monday, Tuesday, &c.; and with two columns for each day—"Written Exercises" and "Oral Exercises."

The principal studies of Monday should naturally be arranged with reference to the business of the Sunday; viz., rest and edification. Those of Thursday should be somewhat similar.

The oral and written exercises should have a relation to each other.

On the first day of the year's course, the plan for working should be delivered to each pupil, along with the lesson-bill, and both should be hung up in the school. Both are, of course, the result of the ripest consideration of the associated teachers. It may contain a list of the books which each pupil must procure.

Instead of further remarks, we shall add one or two examples, but still not as models; every lesson-bill and plan of working must be an individual work.

PLAN OF WORK FOR FIFTH CLASS OF A SEMINARY.

(Boys of 7 to 8 years.)

TO PREPARE AND WORK UP FOR.	IN WRITING.	No. of hours.	ORALLY.	No. of hours.	Total.
Monday.	Arithmetic.	1	From Bible history. Reading from reading-book. Learning a hymn.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	$2\frac{1}{2}$
Tuesday.	Work in German.	1	Stanza of hymn, or some texts. Reading lesson.	$\frac{1}{2}$ $\frac{1}{2}$	2
Wednesday.	Penmanship.	1	Reading lesson.	$\frac{1}{2}$	$1\frac{1}{2}$
Thursday.	Arithmetic.	$\frac{1}{2}$	Biblical history. Reading lesson.	1 $\frac{1}{2}$	$2\frac{1}{2}$
Friday.	Work in German.	1	Stanza of hymn, or texts. Reading lesson.	$\frac{1}{2}$ $\frac{1}{2}$	2
Saturday.	Penmanship.	1	Memorize from reading-book.	1	2

PLAN OF WORK FOR THIRD CLASS OF A SEMINARY.

(Boys of 10 to 11 years.)

FOR	IN WRITING.	No. of hours.	ORALLY.	No. of hours.	Total.
Monday.	Arithmetic: some problems. One drawing.	1 1	Geography: a task to learn or repeat. German: to learn a poem.	1 1	4
Tuesday.	French: translation from Schifflin. Arithmetic: problems.	$\frac{1}{2}$ $\frac{1}{2}$	French: memorizing. Latin: memorizing from grammar.	$\frac{1}{2}$ $\frac{1}{2}$	2
Wednesday.	French: translation from Schifflin. Latin: translation.	$\frac{1}{2}$ $\frac{1}{2}$	French: memorizing. Latin: preparing a lesson. Religion: memorize a text or stanza.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	$2\frac{1}{2}$
Thursday.	German: a composition.	$1\frac{1}{2}$	Latin: memorize from grammar. Geography: memorize a task. German: memorize a poem.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	$2\frac{1}{2}$
Friday.	French: translation from Schifflin. Arithmetic: problems.	$\frac{1}{2}$ $\frac{1}{2}$	French: memorizing. Latin: preparing lessons, or grammar. Religion: memorize a stanza or text.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
Saturday.	French: translation from Schifflin. Latin: translation.	$\frac{1}{2}$ $\frac{1}{2}$	French: memorizing. Latin: preparing lessons.	$\frac{1}{2}$ $\frac{1}{2}$	$1\frac{1}{2}$

6. Principles as to books and methods.

The selection of school-books is sometimes left to the teachers, and sometimes prescribed. Between these extremes, of entire freedom—which may run into arbitrariness—and the utmost definiteness, there are many different degrees. Sometimes the teachers select, subject to the approval or rejection of the officers; sometimes the plan of study designates a number among which the teachers may select, &c., &c.; among all which intermediate plans, that which is legally practiced in Prussia seems much to be preferred. In Austria the latter of the two extreme modes prevails; which secures a fixed and uniform course, one entirely stationary in respect of improvement. In the condition of the Prussian system, it is a useful arrangement for the plan of instruction to designate those books which, for the present, (until better ones appear, or others are found more suitable,) shall be used as manuals. This plan materially aids in fixing the terminations of the class courses; as the rate of progress is thus easily fixed. Thus, in Kohlrausch's Biblical History is taken, during the first year, from §1 to §25, inclusive; and so on.

It is also of great use to designate the means by which the teachers will find their labors facilitated.

As to methods, most teachers are of opinion that they should be properly and exclusively determined by the teacher; and that the plan of instruction should, in this respect, confine itself at furthest to entirely general prescriptions. The teacher, it is said, is the method; a good teacher with a bad method is better than a bad teacher with a good method, &c.

To these views I can not subscribe. If it is true—and who will at this day deny it?—that didactics has its laws, then these must be observed, and can be violated only to the injury of instruction. These laws were established in order to be obeyed. They are based upon investigation of human nature, and of external objects. As long as these last do not change, those laws must prevail.

And as to the comparison above cited we hardly know what to say of it. Of the four combinations,

1. Good teacher with good method;
2. Good teacher with bad method;
3. Bad teacher with good method;
4. Bad teacher with bad method;

it will easily be seen that Nos. 2 and 3 are impossible, as implying evident contradictions, and that Nos. 1 and 4 are mere tautologies. It is self-evident that a good teacher will have a good method, and a bad teacher a bad one. The method is not a garment, that can be put on and off, the man always remaining the same. It is the expression of the teacher's personality, as interpenetrated with the nature of the thing studied, and the living consciousness of the nature of the pupil; it is the objective instructing mind itself. If the idea is admitted that a bad teacher can have a good method, and *vice versa*, it is implied that the method is some external thing, which might perhaps be called a manner, but should never be called by the honorable name of a method.

Such a manner, pattern, or wooden regulation, how useful soever, will certainly never make good instruction out of bad; they do not even desire to be mentioned at all. They belong to mere manner, as do all other merely external matters, and may be in one way or another, and good in either case.

There are many teachers who pay no great attention to methods, either because they have to be arbitrary, or because they do not understand what methods are.* They have probably accustomed themselves to a particular kind of instruction, (commonly that of prelection,) and now find this very convenient, or, as they say, "practical." They say, "I find it exceedingly well adapted to me." Granted; but what does this prove for the value of their method? How do the pupils find it to agree with them? Will the object of instruction be attained? These are the questions which need to be answered. Nor would I desire to destroy that freedom which the teacher must enjoy, in reference to the development of his personal character, and the recognition of it; but this freedom must not become entirely lawless, and proceed arbitrarily, on the principle that "Such is my good pleasure." Nor can I assent to Pustkuchen's doctrine, that "The important matter is the result; not the mode in which it was produced. The former must be definitely required; the latter may be left to free choice." For the value of the results depends precisely upon the way in which they are produced. If the latter is not right, the former can not be valuable. Therefore, I claim that the plan of instruction should indicate the method to be followed in each study, in each stage of it, on the received principles of didactics. Of course pedantry is to be avoided: the old principle holds good, "In things necessary, unity; in things doubtful, liberty; in all things, charity." Therefore, there should be, in each class, fixed outlines for each study, for all teachers, whatever their varieties of character and tendency. These prescribed outlines should not be considered strait-jackets and go-carts, but only as confirmed principles; not as dogmas, but as results of all reflection and long experience, both at home and abroad, and as to be received until better shall be found. Such principles as develop themselves gradually out of the united experience of the teachers of one school, as a common opinion as to the best mode of action, form a center and rule for the efforts of all, and insure unity of aim and endeavor.

7. Lastly, there may be added to the plan of instruction some general regulations as to discipline. This department we consider, as was already stated, not at all as a separate branch of the labor or the attention of the teacher, but as strictly a constituent of instruction; and, gen-

* "A protest has been made, on strictly supra-naturalist or rationalist and thus quite one-sided grounds, against special instruction, against a general methodology; as being that 'by which the power of each body of teachers is broken down, and their most important individualities, and the benefit arising from them, are neutralized.' But the inquiry may very properly be made, What power? what individualities? For all powers—the most distinct individualities—always have submitted, and always do submit, themselves, in all places and at all times, to a higher will, to universal laws, with a free obedience which makes them lofter and freer."—Kapp, p. 79.

erally speaking, only as the general conception of such externals as must be regulated in order that the attainment of the purpose of instruction may be made as certain as possible. In some points the teachers must be agreed. Therefore, the plan of instruction should define,

a. How the books shall be held; whether *ad libitum*, or on some one model, &c.

b. Before what time the pupils must be present; and after what time not admitted, &c.

c. Where they shall assemble.

d. Whether they shall salute the teacher.

e. Whether they shall rise up or not when answering a question.

f. What shall be their position on the benches.

g. Whether any use shall be made of emulation.

A. What measures shall be applied to those who do not perform their work, or not in time, or not in the right way.

i. What shall be done to those who do not complete their tasks, &c.; and as to other matters in the school, in part of a local nature.

Such matters may seem to a mere observer of little importance; they are, however, in fact, of great importance, and for want of regard to them many schools are ruined. In education, every thing is important; and the conscientious teacher will omit nothing. He will, with religious earnestness, apply himself to great things, and to apparently small ones also. Thus he will save himself a multitude of troubles and obstacles; will, by means of foresight, watchfulness, and careful supervision, escape the painful necessity of inflicting frequent punishments; and will every where appear as the loving, careful, and intelligent father of his pupils. He will look for the essence of things, not in laws, regulations, and rules, but within—in the soul. "Salvation comes from within." "Words are nothing; it is the spirit in which we act."

8. Literature.

1st. Plan of instruction for the common schools, with special reference to the province of Prussia. By J. F. Sluymer, (*Lehrplan für Volksschulen, mit vorzüglicher Berücksichtigung der Provinz Preussen. Ausgearbeitet von J. F. Sluymer.*) 2d ed., Königsberg, 1847. Gräfe & Unzer.

After an introduction, respecting the idea of a plan of instruction, the place of the common school, division into classes, extent of study of each class, &c., the author lays down his course of study. For each study he states, in beginning, its end; the furthest point to be attained. He then discusses the study itself; states the portions of it to be studied in the lower, middle, and higher classes; names proper works, both to be used by the pupils and by the teachers, in preparing and further cultivating themselves; and ends the section with observations on the mode of instruction, the most probable defects and errors, &c. A very useful and judicious work. He adds, at the close, some lesson-bills, with remarks on attendance, and gives a sketch of a good school.

2d. Outline of a plan of instruction for common schools, (*Entwurf eines*

Unterrichtsplan für Volksschulen.) By R. Kirsch. Leipzig, 1840. Reclam.

Already referred to.*

8d. Brief plan of instruction for the common schools, as a guide to the surer attainment of their objects. By several educators, and edited, with an appendix in school discipline, by A. M. Claussen. (*Kurzgefasst-er Lehrplan für Volksschulen als Wegweiser zur sichrern Erreichung ihres Zieles. Entworfen von etlichen Schulmännern und mit einem Arhangen über Schuldissziplin herausgegeben von A. M. Claussen.*) 2d ed., improved. Oldenburg, 1844. Stalling. Pp. 50.

4th. The Burgher Schools in Leipzig in 1842. A picture from life. (*Die Bürgerschule in Leipzig in Jahr 1842. Ein Bild nach dem Leben.*) By Dr. Vogel. Leipzig, Barth. Pp. 152.

This work describes the organization of the real schools, burgher schools, and elementary schools of Leipzig. May such a picture soon be possible of all our larger cities!

5th. Ordinance for the Real Schools of Meiningen and Saalfeld. (*Ordnung für die Realschulen zu Meiningen und Saalfeld.*) Meiningen, Gadow. Pp. 76.

A model of completeness as an ordinance for these schools: containing, 1. Classification of schools; 2. Plan of instruction; 3. Regulations as to service of teachers; 4. Regulations for examinations.

* There appeared, in 1829, at Schwelm, (Scherz publisher,) my own "*Plan of Instruction for the Elementary School at Mörs*," (*Unterrichtsplan der Elementarschulen in Mörs.*) Pp. 68. A. D.

XV. INSTRUCTION IN SINGING.

BY DR. E. HENTSCHEL.

(Translated for this Journal from Diesterweg's "*Wegweiser*.".)

I. DEFINITIONS.

By singing we understand the production of the beautiful, as accomplished by the human voice, by means of the union of musical tones with poetical words; the union of music and poetry.

The elements of speech are sounds; of music, tones. From sounds are formed syllables, words, sentences, periods; from tones, 1, in succession, melodies, which consist of phrases and periods; and 2, in combination, harmonies or chords. Every succession of tones, and of combinations of tones, whether of single tones or those consisting of several tones together, (chords,) may be considered in three respects.

1. Height or lowness, or melodically. This department is called Melody.

2. Length or shortness, or rhythmically. This department is called Rhythm.

3. Loudness or softness, or dynamically. This department is called Dynamics.

The relation of tones to each other with respect to their simultaneous sound, is the harmonic relation; and the study of them is called Harmony.

The distinctions between the various kinds of singing, such as the church, solo, choral, &c., are understood by every one. Either solo or choir singing may be in unison or in harmony. A mixed choir is one in which there are women's or boys' voices as well as men's.

Singing, as a development of the beautiful, is an expression or representation of the feelings. The beautiful is within the singer or subject, as the occasion of his feelings; and it appears also as the object of feelings, through the medium of poetry and music.

Several of the faculties are exerted in singing. The singer is concerned, first, with words. These he must learn (unless in the case where he composes them himself, which is not considered here), remember and reproduce. In learning and understanding the words, their logical and poetical natures are to be considered; and use is made of the understanding, the memory, the imagination, the fancy,

and the sense of beauty. And in reproducing these words, besides the above faculties, the voice is employed.

Secondly, the singer is concerned with musical tones. And these also he must learn, (except in the case, not here considered, where he himself composes them), remember and reproduce. In learning these tones, he must, firstly, consider them with exclusive reference to their melodic, rhythmical, dynamic, and harmonic character, and secondly with reference to their inner or æsthetic character, through which they exemplify the beautiful. The former of these two is accomplished by the musical faculties; the latter, by the fancy and the sense of beauty.

The musical faculties include the musical memory, and the powers of apprehending and of reproducing sounds—usually termed the ear; and also the rhythmical faculty, or faculty of time; as well as that which appreciates the degree of loudness of sounds. The power of apprehending sounds, if developed to the point of intuition of sounds, presupposes a systematic knowledge of sounds, which requires the exercise of the numbering and reckoning faculties, as well as of the memory. In order to the comprehension of tones from the written marks, or notes, which indicate them, is required, besides the musical faculties, a system of notation; which is an affair of the understanding and the memory. And to produce the tones thus indicated, the voice is necessary.

Singing represents feeling; sometimes a feeling which indicates a condition which is not in any proper sense that of the singer, and can perhaps never be so. This is the case for instance, almost always in oratorio, in opera, in ballads and romances, and in singing war-songs, hunting-songs, sea-songs, and many others. But the singing is intended to give pleasure; artistic pleasure; and of this there are different kinds and degrees; the highest being that where the reflective faculties are quiescent, and we are transferred so wholly into a foreign condition of feeling, that we are wholly carried out of ourselves; and every feeling that speaks in the music, whether of grief or joy, becomes entirely our own. This is most easily the case with children, who are always more poetical than adults. Jean Paul says, "Singing imparts to children something of the enjoyment of heaven; for they have not yet lost any of their rights to it."

Men also find in singing an inexhaustible fountain of the noblest pleasure,* which no one is forbidden to enjoy. The delights of this art are in nowise confined to the saloons of the rich and great; its pleasures and beauties will abide in the most lowly room, under the

* "The most joyous of joys, music."—*Klopstock*.

humblest roof, if the occupants only know how to introduce them there.

Singing also produces an artistic transfer of the consciousness, not as it were into a foreign condition of life, but into an excitement of a sort at first strange, but which becomes natural through the influence of the singing. Thus a cheerful song enlivens the sad; a spirited one refreshes the weary; and a devotional one gathers together the thoughts, all distracted by the incessant impulses of outward occupations, and elevates them to God. In such cases as these, there obviously takes place not only a mere transitory pleasure, but often a profound and permanent influence upon the whole inner man.*

In other circumstances, again, no stimulus, no excitement of the sensibilities is necessary; the heart itself is "full of a thousand feelings," and they overflow in song. A victorious army sings a *Te Deum*; the mournful choir laments the fallen; a rich harvest blessing opens the lips in joyful hymns; friends departing to distant lands mournfully sing a departing song; a Christian congregation joyously shouts its inspiring hosanna to the Lord; an anguished and stricken

* A remarkable instance of this nature is related in Schubert's "*History of the Soul*," of the preacher Kühse of Berlin, who was freed, by listening to a devotional song, from an agonizing fear of an apparently necessary operation upon his eye; a result which also had such a favorable influence upon the eye, that the operation was found unnecessary.

"And I can testify," says Luther, "which also experience demonstrates, that after the holy word of God, nothing is so good, and so highly to be praised and famed, as music; and that for the reason that it is a controller of all the movements of the human heart, and has such a power over it, that men are often governed and overcome by it, as by a master."

Acoustics, so far as I know, does not yet account for the fact that we feel pleasure in hearing chords, and displeasure at discords. We know that musical tones are produced by regular atmospheric vibrations, and that all vibrations of aliquot parts chord. If two or more tones sound together, either the atmospheric waves coincide and strengthen each other, or they obstruct and destroy each other. These promotions or obstructions evidently communicate themselves through the ear to the nervous system and the mind, in one case in a manner promoting their natural action, and therefore pleasant; in the other, in a manner obstructing it, and therefore unpleasant. The first of these two kinds of impressions we call a consonance or chord, the latter a dissonance or discord. By the use of both, the artist communicates to us the joy or sorrow of his soul, in an immediate manner; and by the solving of dissonances, which concludes a contest of tones, he communicates that excitement which always follows the conversion of grief into joy.

But more than this, acoustics can not at present tell us. Music has not only scientific but psychological abymes: and no psychologist, even though likewise learned in art, has yet been able to penetrate them. But they exist, because the composer's elevation into pure feeling, into the feeling of the harmony of his own inner nature with the world of sound, exists. "It is," says Prof. Grassmann of Stettin, in his excellent treatise on "*Acoustics*," (Stettin, 1837, p. 25,) "the joyful or sorrowful emotion, which we feel within ourselves in a truly physical and real manner; and again, it is the pulse of our own heart, the deepest longing of our breast, which takes full possession of nature, and is given back again to us through musical tones; so that we may feel ourselves to be no longer individualized, but sunk again within the depths of the universal life. This most secret and profound emotion within us, by a wonderful sympathy, arouses even the least stimuable portions of our nature, and leads us into joy or grief, inasmuch that we can hear, sounding back to us, the most secret tremors of the soul; as if nature were calling to us, 'I understand thy profoundest desires; I partake of thy pleasure and thy sorrow.'"

heart cries out of the depths, in lowly penitence. Song is the language of the feelings; and human nature is under a profound necessity to speak in this language. This is proved, not only by the story of "John the Soap-boiler,"* but by the history of all times and people, and especially by that of Christianity.†

Singing has a great influence upon the life of the feelings. There is truly such a power as the Power of Song.‡ From the battle-songs of the ancient Germans, therefore, down to the patriotic songs of the present day; from the hymns of the early Christian Church to the chorals of Luther, we find it employed for the highest and holiest purposes of our race; not to refer to the analogous place which it filled among the nations of antiquity. It should especially be remembered that it operates, by awakening and stimulating the religious feelings, upon the will, and thus becomes a means of elevating the moral nature. Song is not only a promoter of the Beautiful, but through it of the Good.§

II. CHARACTER, PURPOSE, IMPORTANCE, AND NECESSITY OF INSTRUCTION IN SINGING.

The character of instruction in singing, is derived from the character of the art itself. As this has for its object to produce the beautiful by means of a union of words and tones, the former has for its object, words, tones, and the union of them. It therefore includes exercises in

1. Understanding and pronouncing words, which comprehends hearing, reading, understanding; or expression.
2. Understanding and producing tones, comprehending melody, rhythm, dynamics, harmony; or, vocal exercises.
3. Conjoining tones and words, which is the union of the two former, in singing, proper; or, execution.

The exercises in words are the same for singing and language.

* I will quote one similar case from my own experience. In each of the rooms of a school, the class was in the habit of beginning their daily work with a short morning song. The mingling of different tunes and modes sounded ill without; and as circumstances did not permit all the classes to be assembled together for a common morning devotional exercise, it was decided that only one class should sing at a time, each in its turn, a prayer being offered in each of the other rooms. But after a short time all the pupils petitioned for the restoration of the old custom, alleging that it was impossible for them to begin their work without singing.

† "When Christianity had awakened the life of the feelings, and had supplied it with the loftiest ideals of existence, humanity could find only in music a sufficing mode of expression, and thus was gained a new Christian art."—*"Ethetics of Music,"* by Dr. Hand, 1837.

‡ "By the influence which music exerts upon the hearts of all, it operates most powerfully upon the character."—*Kocher's "Music in the Church."*

§ Klopstock said to Rouget de Lisle, author of the "*Marseilles Hymn*," that he was a dangerous man; for that he had killed more than fifty thousand Germans. What then might be said of Körner, Arndt, Schenkendorf, and others? Henry the Lion's motto was

"Fight without song
Can not be strong."

They secure for the pupil a store of imaginations and thoughts; and, as has been observed, they train the understanding, the memory, the fancy, and the æsthetic faculties.

Exercises in tones belong properly to instruction in singing. They give a knowledge of the system of tones, as a separate department of creation, distinguished by an abundance of phenomena; they develop the acoustic faculties, without whose cultivation no education in harmony is possible; and as has been already observed, they train the understanding, the memory, the æsthetic faculties, and the voice.

The exercises in singing, to repeat the observation, have a peculiar influence in enriching and elevating the emotional life, and indirectly upon the determination of the will toward what is good. For it may here be observed, that the sense of beauty, as it becomes developed in any one direction, becomes also, according to the laws of psychology, easier and freer of development in other directions; in this case, namely, in the direction of what is morally beautiful.

Such are the formal and the substantial educational influences of singing. It is likewise in a high degree adapted to assist in leading the child toward what is beautiful, good and true; and to really accomplish this, is its purpose.

It is for this purpose, also, that it is so important for the common schools, which are themselves intended to serve the cause of the beautiful, the good and the true. It may even be said to be absolutely indispensable as a department of common school duty, because it promotes the objects of all the rest, in a manner not otherwise to be supplied.*

The consideration of some of the special influences of singing as a duty, will only confirm their views of its value. It is an excellent means of sharpening the powers of observation, and of accustoming the pupil to acting promptly as directed by a word, a nod, a look. It thus counteracts both the indolent carelessness and indifference of some, and the precipitate hasty ways of others. In short, it is of great value in a gymnastic and disciplinary point of view.

In most other studies, each single pupil stands by himself and acts for himself; or at least a community of action is not indispensable. But the study of singing puts a close and strict constraint upon all the class together, both in an external and internal sense.†

* "Music, by its rhythm and time, imbues the feelings with a regulated harmony. So highly did the Greeks value music, and in so many ways did they practice it, that the expression a "musical man" was equivalent to ours of a "cultivated man." They therefore bestowed the extremest care upon this study, which was designed to unite in a beautiful habitude, readiness, openness, circumspection, and a most powerful mental discipline. "*Pedagogy as a system*," (*Die Pädagogik als System*), by Dr. Karl Rosenkranz. 1842.

† "A choir is like an association of brothers. It opens the heart; and in the streams of song they feel themselves to have but one soul and one heart."—Herder.

And lastly; it may be observed, that good instruction in singing, by developing the pupil's faculties for rhythm, accent, and melody in speaking, renders very valuable assistance to the increasing efforts at present being made to elevate the style of reading above the repulsive sing-song practiced in so many of the ancient schools.

In concluding this statement of the importance and necessity of teaching singing in the common schools, I may not inappropriately quote the following authoritative opinions:

Music is a means of culture so healthful for sense and soul, so powerfully promotive of virtue and goodness, that we are bound to train our youth in it with conscientiousness and dignity, zeal and perseverance. NAGELL.

Music may be considered a department of man's intellectual life, which he can not omit without restricting and weakening himself. It is one of those intellectual endowments by means of which he is to become conscious of, and joyful in the world, himself, and his mental life. MARR.

Even if the young are unable to attain to any important grade of artistic power, music deserves, on account of its educational value, as possessed of a peculiar power of influencing the mind and the heart, one of the highest places as a department of study. NATORP.

III. APPLICATION OF THE GENERAL PRINCIPLES OF INSTRUCTION IN SINGING.

A. *Two Courses; their relation.*

The instruction in singing should be both formal (disciplinary) and material (efficient in the study itself.) These two purposes require:

1. A series of elementary exercises; an elementary course.
2. Practice in singing songs, &c.; a singing course.

The former is to give the pupil a knowledge of the necessary principles, and a mastery of them; and the latter, to train him in expression and feeling. We may lay down, therefore, with a view to secure these objects, the following principles:

The elementary course should

1. Continue during the whole period of school attendance.
2. Include all the elementary tones.
3. Proceed by an unbroken progression.

And the singing course should

1. Also last during the whole school period.
2. Be related to the whole life of the child, both within and without the school.

3. Include nothing which is not significant and attractive.

We shall hereafter recur to these principles and add to them. The present purpose is, to inquire what should be the relation of these two courses to each other within the school?

Should the elementary course precede the other? In this case, the children would during a certain time have only preparatory exercises, without singing; and for a long period together; for the elementary course, to comply with the second and third principles just laid down

respecting it, could not be concluded for weeks and months; which would violate the first principle relating to the singing course, and also the first relative to the elementary course.

We are thus naturally led to the idea of connecting both courses. The most suitable way of accomplishing this, seems to be, to apply in the singing course, the principles learned in the elementary course. This however, sometimes leads to a violation of the principles relating to both courses. It is evidently impossible, for instance, to find songs which shall correspond with all the steps of the long unbroken series of exercises, which shall be satisfactory in point of beauty, and shall bear upon all the various aspects of the child's life.*

There is therefore no mode left, except to divide what can not be connected; to conduct the singing course independently, parallel with the elementary course. We must be able to sing, at Christmas, "Glory to God in the Highest!" and on the king's birthday, "God save the King," without having to inquire whether in either of them there has not been used some progression or measure which had not been practiced. If some such freedom is not taken, we shall never see the fruits ripen which have been for thirty years looked for from the instruction in singing.

But, it may be asked, How then shall the children be taught to sing? I answer, in that manner which is adapted to the grade of development of their musical powers. Those who can only sing by ear, should sing so; and he who can do more, should do more; whether he can only follow in a general manner the outline of what the notes set before him, or whether he can sing strictly and surely the notes as they stand. The singing course requires the application of all that was learned in the elementary course, but in selecting songs we should not depend entirely upon the former. The pupils should in good season receive the notes, with a brief general explanation. Then each of them should make the best he can of them. Such is both the ancient and modern practice of almost all instructors in singing in chorus, both for small and large classes.

But, it may be further inquired, is not this too mechanical a practice? Does not such a course almost altogether prevent singing with a due feeling of the expression?

* At the Martin's Foundation in Erfurt, as appears by the Rhenish "*Gazette*," (*Rheinische Blätter*.) Vol. VI., No. 3, p. 273, all the songs are learned by rote, without notes; that is to say, without any artistic and methodical gradation in their order. It is stated a little further on (p. 286,) that the director of that institution often spends as much as a fortnight in searching and referring, and years in corresponding, to find a suitable song or melody, "because he subordinates the religious instruction entirely to that in singing;" and "rejects all songs which are not good in text and melody, in every particular." I would inquire how long his researches and his correspondence would be, if he should have reference, in addition, to anything like systematic progress?

To this I may reply :

The problem which the child must solve in order to sing with proper expression, is usually stated thus : To be able to sing a choral or simple air from the notes without the aid of the teacher. But do you know what is required for this ? This problem, in the first place, is one in which many persons never learn to solve ; because it has not pleased God to endow them with the requisite power of apprehending the tones as written.* Neither, again, do even remarkably endowed pupils often solve it before their eleventh or twelfth year, however early their instruction is begun, however carefully and skillfully conducted. And only those children solve it at once, who possess very distinguished musical powers ; such who open the whole world of musical sounds to themselves as it were with one magical blow.

And do not be misled if you hear of, or even think you have found, one or another school where the pupils have learned in a very short time to sing from notes or figures. Upon a close examination you will always find one or the other of the following cases true.

Either the airs sung consist of short phrases scarcely including any notes except the first, third, fifth and eighth, and unsatisfactory and crippled, such as the following :



or, the pupils do nothing except to keep time ; that is, they follow after a certain feeling of the succession of the tones, while the teacher, in the pride of his heart, thinks they are reading the notes ; or, some more capable children are acting as choristers to the rest ; who sing after them unintelligently, by ear.

But again, what does "mechanical" mean ? Where does it begin,

* The result of my observations upon more than a thousand pupils of the most various ages and grades of development, is as follows :

Memory of tones, is universal.

A certain sense of tones, without any clear intuition of tones, is quite frequent.

Comprehension of tone, and certainty in it, quite rare.

And these conclusions are confirmed by the following extract from the "*Rhenish Gazette*," (Vol. X., No. 3.) of an article on instruction in singing, by Karow : "For singing, as well as for music generally, certain natural endowments are necessary, and one destitute of these, whatever his efforts, will not learn to sing. We may compute that, of the singing classes in the schools, the following proportions will be found ; of eighty children, ten will become very skillful and competent singers ; twenty others, not distinguished, but still competent ; five and twenty others, will sing well enough with the rest, but not in solo, as they will depend upon the rest ; twenty others will not trouble themselves with the notes, but will sing only by ear ; and the remaining five will be unable to sing, being defective in ear or voice, or both."

and where does it end? A, sings an air wholly by ear, while B sings it by the notes, by his comprehension of the intervals of the octave. A, it may be said, learns mechanically. B, however, although in a higher grade, also learns mechanically. C, again, who feels the meaning of all the intervals, sings by note accurately without depending merely upon a knowledge of the scale, but does not understand what are the harmonies at the base of the melody:—he also sings mechanically. D, who sings also without depending upon mere knowledge of the scale, knows these harmonies, but not the laws of their connection:—he sings mechanically too. Lastly comes E; whose attainments are equal to theirs and who knows the last item also, but has no idea of the mathematical basis of the system of musical tones;—he is a mechanical singer too! The truth is simply this;—children will, and ought to, and must learn songs all the time; joyous, powerful, living songs. And what can be the harm, if they only sing them by rote, if they can not sing by a knowledge of the scale; or by that knowledge if they have it, if they have not attained to the intuition of the melodic interval? Each one of our faculties is from God, the inferior as well as the higher. Therefore watch over each and make it useful in its own time, and accomplish some good thing with it!

B. Contents and Management of the two Courses considered, further.

I. Generally: and

a. Notation. To about the end of the eighth year the children should study without making use of written notes. After that time, however, they should always be used. This delay in using them follows from the principles of proceeding from the simple to the complex, and from the known to the unknown.

It is however necessary both for formal and substantial reasons, that written music be invariably taught. For however little the pupil may know of singing by note, his execution will always be freer in character than if he has learned exclusively by rote. But the very great majority of teachers of singing unite in testifying that under all circumstances, the use of the notes is an important aid in all practice and repetition. And if others maintain from their experience the opposite, and perhaps even say that the notes are a hindrance, they only prove that however interested they may be in singing, they do not know how to use the written notes.

In teaching singing, we should distinguish two principal stages; singing by ear, and singing by note.

The instruction should be by means of actual vision. The representation of sounds by notes is the method most obvious to the eye,

and therefore unconditionally to be preferred. Compare the following two modes of writing an air:



Those exceptionally able pupils who are now and then found in every school, can, according to all experience, sing with equal ease from notes and figures. But it is quite otherwise with all the rest. Whatever may be said to the contrary, they find the notes much the easiest; that is, unless they are drilled in a quantity of unmeaning rhythmic and melodic phrases, instead of real airs, that present a variety of rhythms and intervals. With most children, either the musical faculty gradually develops to the point where they can sing an air with an entire understanding of it, or that degree of attainment is altogether wanting. They are thus, until their fourteenth year, if not permanently, left to practice singing by note, in such a way that they guide themselves, in general, by the form and location of the notes, but where they bring out each single note rather by a sort of feeling of what ought to follow the preceding one, and by means of a knowledge of the scale, than by any real and clear knowledge of melody or the air itself. As long, therefore, as a pupil is not able of himself to execute each note of a written melody, exactly as it ought to sound, so long he has nothing to do with figures, and would get none except utterly indeterminate information from them. But the method by notes always gives him some assistance; it represents to him the relations of the tones, and he has only to look at the notes, to find at least a leading sketch of the melody. And this material representation is of great use in retaining the melody. As the eye seizes upon the groups of notes, the memory connects the tones with them; and it often needs but one glance at the notes to recall whole melodies which have been forgotten. But the figures afford no such assistance. One row of figures looks just like another; and the pupil must go one by one through the whole series, and pick out each note, before he can tell, what the melody is. Therefore, no figures.

The notes should be learned in the key of G, not in that of C, which is in scarcely any collection that most used.

b. With respect to singing.

Whatever is learned by children should be learned as thoroughly

as possible; or if that has not been the case, should at once be made so. What is defective neither educates in form nor in substance; and indeed in the former sense it is positively injurious. One third sung too flat brings after it twenty other flat thirds; and passing over one pause endangers the time at every other pause; &c.

In every stage must be unconditionally required purity of intonation, correctness of rhythmic representation, observance of the dynamic marks, clearness of enunciation. Other things must receive a proper relative share of attention.

This perfection in what the children learn must especially be required in three respects; Firstly, the problems, to be solved must always be suitable to the pupil's grade of attainment; the course of instruction must be one of unbroken progression. This principle is universally known and yet often quite disregarded. In many schools, music too difficult is selected for practice; and the unavoidable result is a lamentable disfigurement of musical works perhaps the noblest of their kind. What is the occasion of such errors? Often vanity; often ignorance of music, not always of an excusable kind.

Secondly; the teacher must be competent to give in every case such directions and guidance as are required, in order to avoid what is false, or to remedy it. No pupil can arrange the succession of problems for himself, without the invigorating aid of the teacher. A whole class may perhaps sing an interval too low, and all exhortation to sing it higher may be fruitless, however earnestly they endeavor to do so, because they do not see what the interval is. In such a case the teacher must aid them, by singing or playing the required note correctly.

If the possibility of correctness by the pupil is conceded, then thirdly, the teacher must insist with persevering and unbending strictness, that the problems proposed be solved without error. This proceeding will accustom the pupil to correctness, which will become to him both a musical and a moral necessity. Once more, therefore, endure nothing erroneous! Every thing depends upon this. He is a forlorn teacher enough who permits inaccurate singing for four whole years, with the idea that things will improve in the fifth year, because "people learn to walk by stumbling." That proverb, like many others, is a heap of meal with a cat in it; and he who can not apply it better than that ought to be ashamed. To such I would say: It is *not* by stumbling that people learn to walk; it is by walking.

Rules for practice.

As important aids toward singing correctly I may name the following:

1. Unless the contrary is strictly prescribed, sing with the full strength of the voice. It is a great fault for the children not to produce a good full tone. A whispering, lisping, powerless melody is never true. But loud singing is not screaming. If the pupils keep strictly to the musical tones they can not scream.

2. In much of the practice, an instrument should be used. Fortunate is the teacher whose school children come every Sunday to church, and standing around the organ, sing the chorals with care and perseverance. That will be worth three singing-lessons a week.

And generally, of elementary singing practice, we may say:

No instrument. Very bad.

Piano-forte. Somewhat better.

Small school-organ. Better again.

Violin. In general, better still.

Church-organ. Very good in some cases.

Sometimes one and sometimes another, according to circumstances.

Best of all.

The non-use of an instrument occasions such crying evils, that every one must understand them himself. Of the instruments above-named, the piano-forte and organ are better than the violin, for accompanying part-singing; but for exercises in accent, and practicing single voices, the latter is much to be preferred. For while playing the violin, the eye can be kept upon all the children, which is not often the case with keyed instruments in ordinary school-rooms; it can be carried about; and its sharp and piercing tones are much more impressive than those of a piano-forte, or of a small school-organ. The tones, again, can be modified upon the violin, in any desired way, &c.

But let me not be misunderstood. Singing with an accompaniment is not an end, but is the means to an end. A choir accomplishes its proper, real, and most beautiful work, only when singing truly and surely without accompaniment—*a capella*. The same object should be sought in every village school.

3. In singing by beat, the beat should be kept without any break, either by the teacher or by the children, or by both. The teacher should keep time by counting aloud, or by movements of his bow, a rod, &c., each pupil being to go strictly by it. If the children keep time, it should be either by causing some to count aloud while the others sing, or by having all mark time. This they should do, not by using movements like those of the instructor, up, down; up, right, down, &c., but by audible strokes of the hand either on a table or into the other hand; a much easier, more natural, and more useful method.

4. If orthography is the schoolmaster's heaviest cross, enunciation

while singing is certainly one of the second rank. Nothing will avail toward this end, except for the teacher to use zealous and unintermitting strictness with the children—no, first with himself, and afterwards—with himself again, and after that with the children—in the enunciation of everything that is read or sung in the school.*

II. In particular; and

a. Elementary course. This should include

aa. Exercises in the understanding of the melodic, rhythmic, dynamic, and harmonic relations of tones; exercises in hearing, which, by causing the pupil to note by written marks what he hears, will lead to a knowledge of writing music.

bb. Exercises in singing; in the production of melodic, rhythmic, dynamic, and harmonic tone formations. A distinction should be made between dynamic exercises and vocal exercises proper, in the strict sense; such as are intended to operate upon the material of the voice, and to give it strength, endurance, sweetness, flexibility, and quickness. Nor can the harmonic exercises be properly referred to those in melody. In order to avoid confusion, the following compendious classification will be found convenient: 1. Melodic exercises, including those in harmony. 2. Rhythm. 3. Exercises for the voice, including dynamics.

To proceed to the necessary directions as to the arrangement and conduct of these departments of practice.

1. It has already been stated that the elementary course should extend through the whole school period, its easiest exercises may be commenced with children of five or six years old. For the rest, "Art is long, and school time short." There are many things which must be studied only by advanced scholars, such for instance as the minor key, &c.

2. The elementary course, as has also been observed, should include all the elements, and therefore the harmonic. Harmony, even in its elements, is of especial value for formal training; and is also very attractive to pupils. It opens to them an entirely new view of music.

3. The principle already laid down, that the elementary exercises should proceed without any intermission, is a universal one; but in singing it is of especial importance, which is the reason why it is repeated here.

4. The matter should be arranged at once subjectively and objec-

* There was a little girl who, in a song to Spring which she had learned in school, sang "A flower out of his shell, springs out the tender shoot." (*Ein Acker, &c.*) Instead of "Upwards out of, &c." (*Emper, &c.*) and when told that the latter was the correct word, she answered that her teacher knew best about that.

Again; a boy was asked what they sang in school, and said, "The Chamber," (*Der Knechtchen*); having caught that sound instead of the word "Scale," (*Skala*).

tively. To arrange it wholly objectively is unpedagogical; wholly subjectively, impossible. It is not correct to pursue one department through, as rhythm for instance, and then melody, but they should be taken in corresponding portions; first the easiest parts of all the departments, so far as they belong to the matter in hand, then the more difficult ones, and so on. But this subdivision must not be carried too far, for fear of losing the connection of what is taught.

5. The different departments should be so taught that some one of them shall always be the main subject, and yet so that from one step to another they shall always form a whole. The former of these requisites follows from the principle of taking simple things before complex; the latter will enliven the children, and render the teaching substantial and significant. If, for instance, the time be $\frac{3}{4}$, and the melody that of the major common chord of the first, there may result forms like this,



And words may be set to such phrases; as, for instance,



Rise up from your pil-low, for cock-crow is past!

The smaller the attainments of the pupils, the more care is necessary to preserve them from what is unmusical and unpoetical. As they proceed further, it is of course easier and easier to select not only brief musical phrases, but entire songs, which can be used first for illustration, and then in the singing course. But care must be taken that the songs do not become the principal thing, and the practice of the elements secondary.

The rule that only one department is to be the object of study at a time, must not be construed to mean that no time should be kept while studying melody, and that the rhythmic exercises should be in monotone. So complete a disjunction as this of the elements of music, neither accords with the nature of music nor with that of the child. We often find rhythm without melody it is true, as in the drum; but melody will not accept the converse, and go without its companion and supporter, rhythm. Even the simplest exercises very soon become wearisome and distasteful if they include no rhythm.

The children's minds develop all parts together; and therefore the melodic exercises should have some rhythmic forms, and the rhythmic ones some melodic form.

6. The course of proceeding should be from things to their names and signs. When, for instance, the children are to go from quarter notes to eighth notes, some quarter notes should first be played, while the children beat in four-four time; then a sudden transition should be made to eighth notes, which will strike the attention of the children, after which the name of the shorter note may be told them, and its representation shown.

7. Even during the stage of singing by ear, melodic and rhythmic voice-exercises should be given.

8. The harmonic element should be as much as possible omitted from the melodic exercises at this stage. It should only be introduced so far as is necessary to understand and correctly sing the major common chord in its simplest forms.

9. The vocal exercises of this period should be arranged with very great care to limit them to the capacities of the age of the children. They should, in general, consist of very easy successions of quarter notes of moderate pitch, sung sometimes loudly and sometimes softly; such, for instance, as these :



entirely useless. The children must hear the chords and their successions. For this purpose the school organ* will be found very useful, but not indispensable, for the teacher will have a living organ; namely, the children themselves.

11. Vocal exercises in the scale—with rather more advanced children therefore—should be made a chief study here.

The best material for this practice is the scale itself, which should be sung in long, sustained, *crescendo* and *diminuendo* tones. The common schools have nothing to do with artistic runs, trills, &c. Instrumental accompaniment is especially necessary here.

The middle notes of the voice should be chiefly practiced, and in the scales of D, E♭, E, and F. The children should never be required to force out very high notes by a violent effort, which proceeding can only do harm. And it is as unfair as it is ill-calculated, to endeavor to train the children to a more correct style of singing by making them sing every air a third or a fourth higher than it was set by the composer.

12. The pupils should be trained to write upon the staff the notes which they hear. Diligent practice in writing music should therefore be required. Otherwise the pupils' attainments will be entirely one-sided. To sing from note is one thing; but it is another, and equally important for musical culture, to be able to write down notes that are heard. Writing music also constrains that class of scholars who are disposed to accommodate their singing to that of the rest, to the exertion of all their musical faculties. And it is the only mode of continuing the instruction after the children have arrived at the point of intuitional comprehension of the music, and of preserving them from innumerable errors. If Nägeli had done nothing except to introduce writing music as an exercise into the schools, he would even then have done them an exceedingly great service.

b. Singing Course.

I shall repeat here the three laws already laid down, and shall add others.

1. The singing course should continue through the whole school period. Even the youngest pupils will readily sing simple airs by ear; and according to all experience will partake of their enlivening and improving effects.

2. The singing should have a real reference to the life of the child.†

* The melodeon, perhaps, in an American school.—*Trass*.

† "The simplest enjoyment and the simplest instruction, are enlivened and reinforced by singing; and what we even fail to accomplish by instruction in faith and morals, may be taught by song."—*Goethe, Wilhelm Meister's Wander-Years*.

At the Rauhe Haus near Hamburg, great stress is laid upon singing. Credible reporters.

Singing is intended to enliven, ennoble, and cheer the whole of man's life. Regard should be had to the present and the future of the child; to his permanent and varying relations to nature, other men, and God. With reference to the present condition of the children, instruction in singing should, above all things, stand in the closest connection with religious instruction; including the faith, love, and hope of Christians. And on every occasion of school life when the religious feelings of the pupils are appealed to, at the beginning and end of lessons, weeks, months, or years, at preparation for a church festival, at confirmation, the king's birthday, &c., singing should be employed. In our day, the liturgical element, in which singing holds an important place, has been introduced for religious purposes into schools. This is much to be rejoiced at; and may be of very great service.

There should be a little singing festival in the church at least once a month; and not merely on such occasions as visitations, consecrating an organ, &c. This might be done without difficulty almost every where. But it will be necessary to confine the selections to the simplest class of music, and to persevere in accustoming the congregation by little and little to take more pleasure in such music, than in the ungodly uproar of the usual style of church music. Materials truly useful should be selected, every thing should be thoroughly practiced, and care should be taken that the audience may understand the words.

Besides religious songs, secular ones should also be learned, so that the children may use them as a means of enjoying themselves at home, at play, at festivals, during walks, journeys, &c. And for this purpose, such music is appropriate as has the artistic effect of transporting the child into conditions of existence quite strange to him.

How shall reference be had, in the school singing, to the future of the scholars?

First, by having a good stock of chorals.* Chorals are an indispensable necessity of religion and sacred worship. Every child should be able at leaving school, to sing at least fifty or sixty chorals from memory.

There should also be a suitable number of secular songs. With proper management, the pupil may graduate in possession of as many as thirty such. What should their subjects be? Experience shows that the religious feelings of the people expresses itself through the medium of chorals. For this reason I should use songs for other

describe the judicious mode in which Mr. Wichern makes use of it at prayer and labor, exhortation and admonition, at serious and cheerful occasions, and sorrow and joy, and of the important good which he thus accomplishes.

* These correspond to our usual church psalmody.—*Trans.*

purposes. Of them, also, I should exclude some kinds, viz: 1. All songs of particular vocations, except war-songs, and for their proper localities, mountain songs and sea-songs. 2. Songs for occasions that rarely happen in actual life; such as, "Up! with mountain-staff in hand, forth with joy to Switzerland;" which is nevertheless in itself a good song. 3. All songs which, though perhaps good in themselves, do not correspond with the popular mode of thought and feeling; such as, "Know'st thou the land where the lemon-trees bloom?" 4. Love songs. 5. Drinking songs. I add a mere suggestion of the proportion in which I would perhaps arrange thirty songs to be learned, namely: five, to incite to good company; three soldier's songs; three traveling songs; six for general expressions of pleasure, and for observation of nature; four patriotic; five romantic historical; four miscellaneous. Total, thirty. For girls, I would substitute cradle songs for the soldiers' songs, and for the traveling songs, others referring to the observation of nature.

3. All songs should be beautiful, both poetically and musically.

What is worthless in itself can never develop the artistic sense, nor properly cultivate the feelings. There are good words to bad tunes, and wretched rhymes to beautiful tunes. And it requires much study on the part of the teacher to acquire a sure judgment on this subject.* Especial care is needed with respect to children's songs, properly so called; for among the great number of them are many bad ones. A children's song is never good unless it can be sung with some enjoyment by grown persons also. Moralizing songs for children, in particular, are bad, and always will be; and so are those where the children are made to sing to each other, and encourage each other to joy, to innocent cheerfulness, &c.; such as,

"Open brothers, ear and heart,
Unto teachings wise."

"Our daily work is done at length:
Now for a joyous game!
Pleasure for working gives us strength,
And strengthens all the frame."

* "Notwithstanding the great number of songs for the young, yet but very few of them are really adapted for use; partly on account of their faulty and spiritless melodies, and partly, and especially, on account of unsuitable words. * * * * The text of a song must be adapted to the young, clear and plain, joyous and vivid; equally removed from watery and feeble sentimentality, and from a stupid jumble of morals and phrases."—*Memorial of the Nuremberg Education Society.*

As music is variously taught and practiced in the teachers' seminaries, many young teachers come to believe that it is an easy thing to compose for singing. So they proceed with great confidence to make motets, and hymns and cantatas, and make all possible haste to introduce their compositions into a church or a school. Great evils are to be apprehended from this source.

Some valuable observations upon this pseudo-poetry are to be found in Franz Horn's "*Fortepiano*," and Hiecke's "*Instruction in German in the German gymnasia*" (*Der deutsche Unterricht auf deutschen Gymnasien.*)

With regard to the relation between the words and music, we can not be too mistrustful, in particular, of operatic airs with words set to them.*

Songs, to be appropriate, must be both objectively beautiful, in themselves considered, and suited to the children's capacity. Children should not be forced up to any thing which is without the sphere of their apprehensions. On this point, I shall hereafter remark further.

4. Each style of songs should be used for its proper purpose; for each has its peculiar influence in training the pupil.

a. Sufficient reasons have already been given for cultivating both church and secular singing in schools, it may be added, that the former can not properly be very extensively used in the lower classes, and must commonly be sung somewhat faster than at subsequent periods.

b. Care should be taken to have the singing in unison, or in parts, as the case may demand either. Children less than nine years old, usually sing in unison. Part singing is not natural to them, whatever credit it would obtain at examinations. With older children the case is different; they may sing in parts; but should still not transgress the limits of popular requisites in the artistic direction. Part-singing is however so efficient a means of artistic training, and its power over the feelings is so great, that it should not be omitted, even in the smallest school.

On this important subject many mistakes are made. The following principles may serve the reader as initial points for his belief.

aa. A mixed choir is always most efficient; and should therefore be formed wherever possible. The school will furnish sopranos and altos; and there can always be found some accommodating youths or men, who will sing tenor and bass. The thing can easily enough be done without sounding drums and trumpets, with prudence and perseverance.

The societies for men's choirs seem in some places and lately to have hindered the prosperity of small mixed choirs. This is much to be regretted, however useful those societies are. Forget not the children!

* In an extensively used collection of songs, the "Hunter's Chorus in the Freyschutz," is to be found, set to an Advent hymn! In the same, "Christ a gardener," is set to the duet from Titus, "In friendship's arms;" which, as a reviewer in the "*South German Messenger*," (*Süddeutscher Boten*), says, "fits like a theatrical costume on a clergyman."

bb. In schools where only the children can be employed, the following plan may be adopted, which will prevent very various errors, namely: The children should sing chorals, generally, in unison; secular songs in two parts; and all music for religious, and especially church festivities, in three parts.

Chorals can not and should not be sung in parts, for the reason that time will not be found for practicing them in that manner; and because it would prevent those appointed for the middle and lower parts, from thoroughly learning the air—a great disadvantage.

Only on some few special occasions should a choral be sung by the children in three parts; and if such an experiment should succeed, it would probably be beneficial.

Chorals in two parts are always somewhat dry. But if the teacher will have some such, let him be careful to see that the second part is of an independent and marked character.

The reasons for singing secular songs in two parts are these:—

1. This method is indicated by the nature of that sort of music.
2. The practice will be found sufficient for the needs of the children in that particular.

3. It does not, like singing in three parts, impose on some of the children the necessity of sacrificing themselves for the sake of the rest, by the unnatural practice of singing in the lower register, which is also in itself uninteresting to them, and if long continued, very wearing.* But the church requires a more dignified style. Here, singing in two parts seems empty and dry; at least three parts are necessary. Nor should the choruses in the liturgy be sung in two parts only; but rather in unison, with organ accompaniment. Children can profitably sing in four parts only under very favorable circumstances.†

c. Solo singing, as well as singing in choir, must also be attended to. This is necessary both on account of the individual development of the pupil as well as the formation of his style, and the consequent influence of it on the feelings. With regard to this last point, I need only refer to such songs, motets, and little choruses, as are used in school in which choruses and solos alternate. The effect of such pieces when well executed, is very good. It also has a very good effect, when some single verse of a song is sung by some one person, the whole singing the next. The solo singers should be trained separately, by which however I do not mean that they should be trained in the higher artistic departments of music.

* Gersbach, Herder, Rinck, Mühlhney, B. Klein, and the profound Nögeli, have, I believe, scarcely set any children's songs in more than two parts. Their statements of the reasons, however, are not sufficiently lucid.

† There are very various opinions on this point, and I know that many persons differ from me. But I have many authorities on my side.

5. Care should be taken, not only to select music suitable to the children's capacity, but to practice them long enough to be able to execute them with certainty and freedom.

This principle has already been indicated in substance, but ought to be here again stated in full and expressly.* It is not until all technicalities are done away with, and all sense of constraint or impediment by difficulties is removed, that the heart of the singer opens itself. The desperate efforts of some singers, or entire choirs, to accomplish a task beyond their abilities, does not even afford the audience the pleasure derived from the breakneck leaps of a rope-dancer. Therefore, no great contrapuntistic choruses, nor elaborate solos. All that is required is simple songs, and little motets and choruses, at the utmost not more difficult than the most difficult of Hientzsch and Erk. If circumstances imperatively require that the children should execute some more elaborate piece of church music, the most skillful of them should be selected, and practiced in private on the cantatas, hymns, &c.

6. The practicing of songs, during the period of singing by ear, should be by playing or singing them over to the children, who should then endeavor to execute them.

When the period of singing from note begins, some ten or twelve lessons will probably be needed to acquaint the children with the main points as to the meaning of the notes, especially their rhythmic value; which should be thoroughly illustrated by examples. Then will follow the use of the notes in practicing songs. The children should be prevented from becoming discouraged if they do not at first understand more than a very little of the details of the system of notes. They should be allowed to be astonished, not at what the notes do not do for them, but on the other hand as the real help which they afford. And they will be much delighted, as the meaning of the written notes, at first so puzzling, becomes gradually more and more distinct, and when at last the song which is given them to sing shall contain its own explanation.

C. INSTRUCTION IN SINGING, IN COMMON SCHOOLS OF THREE CLASSES.†

(Two hours of singing in each class, weekly.)

1. *Lower Class*.—(Four half hours.) In each half hour; Elementary Exercises, ten minutes; Songs, twenty minutes.

2. *Middle Class*.—(Two full hours.) *First*: Indispensable information as to the notes, and for practicing songs; together with repetition of songs previously learned. This during from four to six weeks.

* "In order that the execution of compositions may be as little as possible interrupted or hindered by ignorance or hesitation, and that no perplexity may interfere with the artist's conceptions of the singer, and thus prevent the successful training of his feelings."—*Nägeli*.

† *Viz.*, of a three years' course.

Next, in each hour; Vocal Exercises, ten minutes; other Elementary Exercises, twenty minutes; Songs, thirty minutes.

3. *Upper Class*.—(Two full hours.) *First*: Continuation of the fundamentals of written music, and repetition of songs already learned. This during three or four weeks.

Then, during each hour; Vocal Exercises, ten minutes; other Elementary Exercises, twenty minutes; Songs thirty minutes.

Details on the above points.

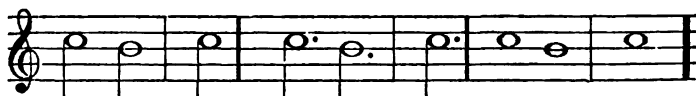
a. Lower class.

The elementary course consists of simple exercises, in the singing by rote of single tones and simple connected tones; in distinguishing high and low, long and short, loud and soft tones, in counting to time, &c.; such as are prescribed in almost all the better class of books on the subject. A course of vocal exercises should also be combined with this.

Take for example the following cadence.



The teacher plays these notes, the children counting them. Then let them describe them, somewhat thus; "The second tone was lower than the first, and the third higher than the second; and the third was like the first." Then let them sing them, to the sound *ah*, first getting the measure of their duration from the playing of the teacher; who must by the way watch carefully to see that the last note is not flat. Then let them count to each tone, one, two, and one, two, three, and one, two, three, four, while the teacher is playing them; and let them also beat time. And then let them do the same to their own singing of the notes. In these cases, they will sing the following.



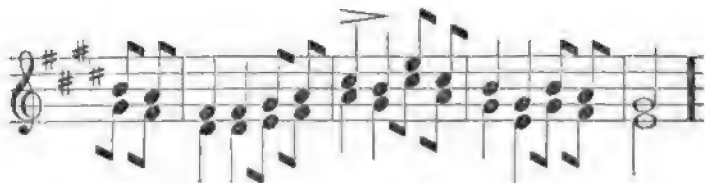
Then let them sing the same notes to words, such as "summer comes," or the like; which will give an opportunity to train them in enunciation. That is, they must say, not "sum-mer," dwelling on the *m* with their mouths shut, but *su-mmer*, holding the vowel sound, &c. Lastly, the cadence may have a name given to it; it is a "cadence from below." Such exercises will be found very interesting, if conducted with spirit.

The songs, in the lower class, must be sung by ear, after being

played or sung by the teacher. The following may serve as an example:



Oh how cold the weather's growing. And the sky all cloud-ed o'er,



From the North fierce winds are blowing, And the sun-shine's seen no more.

First the words should be repeated to the class, and said over by them. Any mispronunciations should be corrected; and the words "o'er," "north," "fierce," &c., briefly explained. The teacher then announces that he will play the melody. All are attentive. He plays the first half of it, once, twice, thrice, four times; the children beating time, which they can easily do. Some of them will at once begin to hum over the air, but should be stopped. The fifth time, they may all sing it, softly. Then the teacher sings it alone, then plays it alone; and then the children sing it by themselves, the teacher marking time for them. Perhaps they will sing the second or third G too low, or fall behind the time, or take breath after "cold," or make the first note of the third full measure too short, &c.; all of which errors should be corrected on the spot. For a change, sometimes part of the class may sing, and sometimes all; and perhaps some one of them may be found bold enough and able enough to sing in solo. The teacher should always accompany, to prevent falling from the pitch. After the first half of the melody has been learned, the second should be practiced in the same way. When the whole is well committed, the teacher may play second to the children's soprano, or sing a second, and play the first. It will not sound well for him to sing the air. Then the remaining stanzas of the song may be learned. Every thing should be executed correctly and well. The result of such a course of training will be very satisfactory. When the children go home, they will be singing the song, wherever they are. What more could be desired?

b. Middle class.

As has been stated, this class should begin by devoting from four to six weeks to a very simple preparation for singing by note. The object of this preparation should be to make the children acquainted with the leading points of the notation, without burdening them with details. It can not be expected that the children shall learn to sing independently by note; but they will receive whatever assistance the notes can give them; their eyes, ears, and feeling for time, will be trained. An excessively long step will be avoided, by thus placing the children midway of the great space between singing without notes, and the free reproduction of what the notes represent. They will attain to the position occupied by those many thousand singers who do not indeed really sing by note, but who still would not on any account be without the notes. In short, the pupils will be placed in a situation where they will learn songs, not with a full-intuitional appreciation, but with the aid of the use of their faculties of tune and time.

What should be the exact importance of these acquirements? I think it should be sufficient, if the children learn that

1. The tones, rise, or fall, as the notes do.
2. The notes show whether the tones proceed onward by gradations or jumps.
3. The steps of the latter kind are various; thirds, fourths, fifths, sixths, sevenths, octaves. The pupils must learn to recognize these promptly by the notes. A short series of exercises should be given to acquire this facility, preparations having been already made for it in the lower class; by playing one and another of these intervals in different parts of the major scale, and making the children what they are; and then by the reverse method of calling for an interval, which the children are to sing. But nothing difficult should be introduced.
4. The notes indicate the length of the tones.
5. There are whole, half, fourth, eighth and sixteenth notes. A whole one is as long as two half ones, a half as two fourths, &c.
6. There are also rests or pauses, fourth rests, eighth rests, &c.
7. A note or a rest very often has a point or dot with it; which increases its length one half.
8. The notes are arranged into groups or sections, each of which is called a measure. One measure may contain four quarter notes, or three, or two; or three eighth notes, or six, &c. The pupils must be able to name all these.
9. They must also be able to beat time. For $\frac{4}{4}$ time, four motions of the hand must be made, for $\frac{3}{4}$ three, for $\frac{2}{4}$ two, for $\frac{3}{8}$ three, for $\frac{1}{4}$ six, or sometimes two. It will be a sufficient exercise to them, if ap-

propriate portions of airs are written on the blackboard, named, and then played, while the children keep time, counting aloud.

10. Various marks are used to indicate whether to sing loudly, moderately, or softly.

11. The words are printed underneath, one syllable to each note; if several notes are connected together by a stroke or a curved line, they are all to be sung to one syllable.

12. There are many other marks, which will be learned afterward. The present is only a small beginning.

To know the names of the notes will be of no use to the children in this stage, because the present object is not an introduction to the system of the tones, but merely to afford the means of gathering by the eye an acquaintance with the outlines of a melody.

About midsummer, if the course commenced about Easter, the children can continue their singing practice in the green and flowery meadows; where they may wander without being constrained by methodical hedges and ditches, walls and timbers; freely, joyously, and, if God will, piously.

Rules for singing practice.

1. Whatever is to be understood must, so far as the children's capacity will go, be made entirely clear to them, and then stated by them.

2. In general, the children should be encouraged to make exertions of themselves; and they should be encouraged—especially those who are in their second year—to endeavor frequently to sing the air which is in hand, without assistance. But this must be done cheerfully and with interest; without any misery or any inflictions.

3. Where the children's knowledge fails them, play them the air.

4. Part of them—to repeat the suggestion once more—only count time aloud, while the others sing. But all of them must always keep time by light blows on the other hand or on the table, until the music is learned with entire certainty.

5. Every eye should be strictly required to be directed to the music. The less capable may often be assisted by pointing out one note after another with a stick.

Close adherence to these fourth and fifth rules will often give the children a facility in singing by note beyond what could have been believed.

An example will illustrate this course of proceeding. I select the beginning of a well-known song by Nægeli:—



Let the notes be very plainly written on the blackboard, at first without the words. Then let the notes be first read, thus: "Dotted eighth; sixteenth, rising second; fourth, rising second; fourth, falling second, &c., &c.;" ending with "fourth, rising fourth; half, falling third."* Then a rising fourth and a falling third may be sung. The children can sing these intervals themselves, with occasional assistance, if their ear has been sufficiently well trained. That is, if they remember clearly the triad *g, b, d*, they will not sing *g, b*, instead of *g, d*. Then those who are in their second or third year's practice may sing the scale with *la*, except a few who are to be stationed with the smaller children, to count aloud, keeping time, also, with blows on the hand or the table. If the air is correctly sung, well; if not, let it be played over by the teacher. Then the smaller children may sing along with the rest, another section counting; or all may beat time. This exercise should continue until the melody is sung with entire correctness and in strict time. Then the text may be written under the music.

This practice is for the last half of the singing lesson. The first half should be used for the elementary course. My mode in this particular would be the following: Take one of the better works on teaching singing, and begin where the subject of written notes is introduced, and proceed strictly as is written, going very slowly, since there is time enough; and be satisfied with whatever acquirements can be made. Only, some portions of the songs given as exercises in time or melody may perhaps be omitted, if the purpose of comprehending the written tones is attained; since the singing-course has particular reference to the development of the feelings of the children.

This should usually be opened by vocal exercises; which are also often properly introduced just before or during the singing exercises. Our practice (at Weissenfels) is to practice the scale, at first in two

* This mensuration of the intervals is of the greatest importance; at least, my own experience shows that for the majority of pupils it is the simplest and surest way of learning to sing truly. It is an excellent thing when a pupil feels the key so well as to be able to strike the intervals correctly by taking the notes in their relation to the key note. But this power will fail him as soon as the melody passes a little beyond the limits of the simplest juvenile songs, and even within those limits will be much confused by a modulation. In these cases, if the pupil is not practiced in the sort of knowledge of the intervals referred to in the text, he will grope about in an uncertain manner, as is the case with too many who sing by figures.

tetrachords (c, d, e, f; and g, a, b, c:) then altogether, usually with the sound a, b, sometimes loudly and sometimes softly, (the latter is much the most difficult, but is very important;) and always beating time (with two, three, four or six beats to a note.)

Thus the pupil makes his way through the middle class. At his leaving it, his voice will be found somewhat developed, a fund of songs laid up in his memory, and his power of reading at sight gratifyingly cultivated. The latter however is very seldom the case to an extent that makes it allowable to dispense with carrying on the elementary course together with the singing course, in the higher class. Careful beating time must also still be kept up for a long period yet; it is only in the latter years of their school life that the more capable of the children will be found capable of singing independently by note.

c. Upper class.

Before proceeding here with the singing course, the pupils must be somewhat further practiced in written music, for the sake of easier understanding. From three to four weeks at the beginning of the course may be specially devoted to this purpose. However much progress may have been made in the middle class, or the elementary course, they must yet be taught in the upper class:—

1. That there is a universal (chromatic) scale which is several times repeated.
2. That it consists of twelve tones.
3. That the tones are so near together that it would not be easy to sing another between them.
4. That the steps from one of these tones to the other is called a half tone or semitone.
5. That these tones have their fixed names and signs; and what these are. The scale most natural to commence with will be that of C, the intermediate tones being added. The nature of these semitones may be illustrated by marks, by a scale, a staircase, the keys of the piano-forte, the situation of the tones on the neck of the violin, and by playing and singing them over.

Reading written music, to which the middle class has at least afforded an introduction, must here become an indispensable preliminary to singing practice. The subject of the different keys can not be begun in these three weeks of instruction; it must be left for the elementary course, to be there treated deliberately and thoroughly.

About Whitsunday, of the third year, again, singing practice may recommence, the vocal exercises being resumed, and the elementary course taken up again where it was left off in the middle class.

I may properly give an instance of the instruction in singing of the upper class; for which I will select a Whitsunday hymn.



The course of instruction may be as follows:—1. The key, signature and time may be determined. 2. Count the measures. 3. Read the notes, as follows, a; a; rising fourth, d; rising third, f sharp; falling second, e; falling second, d; rising second, e; rising second, f sharp; falling third, d, &c. 4. Take up the longer intervals. Which are the thirds? The fourths? Who can sing a fourth? How does a sixth sound? &c. 5. The upper section makes an attempt to sing the scale with la, the lower section beating time and counting aloud. Every eye fixed on the notes! Trifling variations from the melody can easily be corrected with the violin; if there are any serious ones, the class must be stopped, and the error expressly corrected. If they do not succeed after two or three attempts, play the passage to them.

6. All the class sings the scale, naming the notes by name, and beating time accurately.

7. The words are put under the music.

When afterward the keys are discussed, they can be properly spoken of at each lesson. The principal thing, however continues to be that the children shall recognize the intervals, even if only by their numeral designation, and not by the interval of sound. Experience teaches that those who learn on that plan gain a very good degree of certainty and facility. It will of course be observed that as the elementary course progresses, the increasing vocalizing powers of the class can be more and more exercised.

I could now proceed, if my space would permit, to describe in very bright colors our scholar, now stepping forth from the upper class into active life, free, joyous, bold, and if God please, pious. But I leave every young teacher to imagine such a picture for himself.

POLYTECHNIC SCHOOL

OF

FRANCE.

THE Polytechnic School of France was established by a decree of the National Convention, dated March 11, 1794, through the influence of Monge, Carnot, Fourcroy, and others, under the name of the Central School of Public Works—which name was changed to its present designation in 1795. To prepare a suitable choir of teachers, a certain number of pupils of the right character were trained under such professors as Lagrange, Laplace, Hassenfratz, and Berthollet.

The original object of the school, a diffusion of mathematical, physical, and chemical science, and the graphic arts, has been constantly maintained under the successive changes in the government of France; and although the pupils are not obliged to enter any branch of the government service; in point of fact, most of the graduates become engineers, military, naval or civil, or are promoted to the direction of public works. Since 1800, the school has furnished, on an average, one hundred thoroughly educated graduates for the public service, annually.

The general charge of the institution belongs to the war department, and the immediate control is vested in a military commandant, assisted by a vice-commandant, both of whom must have been pupils of the school with an able choir of subordinate officers, professors, and tutors. The following account of the school is abridged from President Bache's Report :

The school is open to all candidates over sixteen years of age, from any part of France, who give satisfactory evidence of talents and acquirements.

Each applicant registers his name at the prefecture of the department in which he resides, and is examined for admission in the district to which he belongs, or where he is under instruction. With this registry is deposited the certificate of the date and circumstances of birth, a certificate of vaccination or of having had the small-pox, and of general health, and an obligation on the part of the parent or guardian to pay the sum of one thousand francs (about two hundred dollars) yearly to the school, in case of admission.

The subjects upon which a candidate is examined are—1. Arithmetic, in all its branches. 2. Elementary geometry. 3. Algebra. 4. Plane trigonometry. 5. Statics treated synthetically. 6. Elements of analytical geometry. 7. The use of the logarithmic tables. 8. Latin, as far as it is taught in the rhetoric class of the colleges, and French composition. 9. Drawing, with the crayon and with instruments. If the candidate possesses, in addition, a knowledge of physics, chemistry, German, and of India-ink drawing, they are taken into the account.

There are four examiners appointed annually by the minister of war, on the nomination of the council of instruction of the school. These divide between them the different districts in which the examinations are to be held, and repair, at a stated time, between the first of August and tenth of October, to the place appointed. The performance of the candidates is registered according to a scale of marks, as nearly uniform as the judgment of different individuals allows; these registers being compared, the candidates are admitted in the order of merit, thus

determined, as far as the number of vacancies permits. The successful candidates are informed of the result of their examination, and join the school early in November. They are received by a board (jury) of examiners, who subject them to a second examination, intended to verify the first, and to the inspection of a surgeon. This board consists of the two commandants, the director of studies, the two permanent examiners attached to the school, and the four examiners for admission.

There are twenty-four gratuitous places for pupils whose families are in needy circumstances; of these, twelve are at the disposal of the minister of war, eight of the minister of commerce, and four of the minister of marine. These bursaries may be halved. No pupil who is lower than two-thirds from the head of the list, in the order of merit at admission, is eligible to a bursary or half bursary.

Besides the students thus regularly entering the school, a certain number of youths are permitted to attend the lectures, (*auditeurs libres*.) The majority of these are foreigners.

The highest executive authority in matters of instruction, is the director of studies. This office was created in 1804, previous to which time the council of instruction had discharged its duties. The director of studies oversees the details of instruction, being immediately responsible to the commandant of the school. He is appointed by the king, on the joint nomination of the council of instruction of the school and of the academy of sciences, and is a member of all boards convened in relation to its affairs. A council, termed the council of instruction (*conseil d'instruction*), and composed of the two commandants, the director of studies, the professors of the school, one master, appointed annually by the teachers from among their number, and the librarian, who acts as secretary, meets once a month for the discussion of business relating to instruction. When changes are required in the courses or in the examinations, they are discussed in this council and referred to a second, which may be considered as the chief legislative body, in regard to the subjects composing the instruction.

This council, termed the council of improvement, (*conseil de perfectionnement*), consists of the two commandants, the director of studies, the five examiners in the school, one examiner for admission, three members of the academy of sciences, three professors in the school, and a member from each of the branches of the public service into which the graduates enter.

The officers directly concerned in instruction are, the professors and the repeaters (*répétiteurs*.) The professors and masters are appointed by the minister of war on the joint nomination of the council of instruction and of the particular academy of the institute in which the subject of instruction is classed. The professors communicate instruction by lecture and by general interrogations of the pupils. The repeaters conduct the special interrogations, and give aid to the pupils while engaged in study. The title of "repeater" is, no doubt, derived from the original duty of these teachers having been to go over the lessons of the professors. The repeaters do the more laborious work of instruction, and since their substitution for the pupil teachers, who were employed in the early period of the existence of the school, have been considered most important officers. Some of the most distinguished professors have risen from the rank of repeaters.

There are two divisions of the pupils for instruction, corresponding to the two years' duration of the courses. No pupil is allowed to remain in one of these divisions more than two years, nor in the school more than three. To proceed from the first division to the second, or to graduate, an examination must be passed upon the studies of the year then just elapsed. Until 1798, these examinations were conducted by the professors, but now there are examiners, who are not connected with the school. Two of these are permanent, and appointed by the minister of war on the joint nomination of the council of instruction and of the academy of sciences, and three are appointed annually on the recommendation of the council. The courses of the first year are—analysis, geometry, mechanics, descriptive geometry, application of analysis to geometry, physics, chemistry, French composition, topographical drawing, drawing of the human figures, landscape drawing, and India-ink drawing. Those of the second year are—a continuation of the analysis, geometry, mechanics, physics, chemistry, and drawing of the first year, besides machines, geodesy and social arithmetic, architecture, and the German language.

ANALYSIS.

First Year. Differential and integral calculus, to include the rectification and quadrature of plane curves, and curved surfaces, and the cubature of solids.

Second Year. Differential and integral calculus continued. Elements of the calculus of variations and of finite differences. Formule of interpolation, &c.

MECHANICS.

First Year. Statics.—Composition and equilibrium of forces. Theory of parallel forces. Of the center of gravity. Attraction of a point by a homogenous sphere. Dynamics.—General formation of motion. The pendulum. Projectiles. Problems in physical astronomy.

Second Year. Statics continued. Forces applied to an invariable system. Principle of virtual velocities. Application to simple mechanics. Dynamics. D'Alembert's principle. Collision. Moment of inertia, &c. Hydrostatics. Hydrodynamics.

Every lecture of analysis or mechanics is preceded or followed by interrogations by the professor. Problems are given out for solution. The repeaters interrogate the pupils three times per week. After the completion of the course, general interrogations take place, upon the whole subject, by the professors and repeaters.

DESCRIPTIVE GEOMETRY.

Problems relating to the right line and plane (twelve problems.) Tangent planes and normals to curved surfaces (four problems.) Intersections of surfaces (seven problems.) Miscellaneous problems (seven.)

Applications of Descriptive Geometry. Problems with a single plane of projection, and a scale of declivity. Linear perspective (three problems.) Shadows (three problems.) Stone cutting (seven problems.) Carpentry (four problems.)

India-ink drawing. Elements in four examples.

ANALYTICAL GEOMETRY.

The right line and plane. Curved surfaces.

The professor may precede or follow his lecture by interrogations. During the course the class is examined by the repeaters, and at the close of the studies of Analytical Geometry there is a general review.

MACHINES, ASTRONOMY, GEODESY, AND SOCIAL ARITHMETIC.

Elements of Machines. Machines for transporting barthenes and for pressure. For raising liquids. Moved by air, by water, by steam. Useful effect of machines.

Astronomy and Geodesy. Formulas of spherical trigonometry. Measurement of space and time. Of the celestial bodies. Of the earth. Elements of physical geography and hydrography. Geodesy. Instruments. Figures of the earth. Projection of maps and charts.

Elements of the calculation of probabilities. Tables. Insurances. Life insurance, &c.

Interrogations by the professor accompany the lessons. Those by the repeater must be at least as frequent as those by the professor. At the close of the principal courses there is a general review, in the way of interrogation, by the professor and repeater.

PHYSICS.

First Year. 1. General properties of bodies. Falling bodies. Principle of equilibrium at fluids. Specific gravities. 2. Heat. Radiation, conduction, &c. Vapors. Latent heat. 3. General constitution of the atmosphere. Hygrometry. 4. Molecular attraction. Capillary action. 5. Electricity. Laws of attraction, repulsion, distribution, &c. Atmospheric electricity. Modes of developing electricity.

Second Year. 6. Magnetism. Phenomena and laws of magnetism. Instruments. Reciprocal action of magnets and electrical currents. Electro-dynamics. Mutual actions of electrical currents. Thermo-electric phenomena. 7. Acoustics. Of the production, propagation, velocity, &c., of sound. Acoustic instruments. 8. Optics. Mathematical and physical optics. Optical instruments.

During the whole course the repeaters interrogate each division twice every week; they go through the study-rooms, and give any explanations which may be required by the pupils.

CHEMISTRY.

First Year. General principles. Division of the course. Examination of the principal simple substances. Mixtures and binary compounds. Laws of definite proportions, &c. Hydrides. Oxacides and oxides. Bases. Neutral binary compounds. Salts. Principal metals.

Second Year. Reciprocal action of acids and oxides. Action of water upon salts. Laws of the more important. Borates and silicates. Glass and pottery. Nitrates. Gunpowder. Phosphates, &c. Sulphates. Chlorates. Chromates and other classes of salts, with details as to the more important. Extraction of the metals from their ores, methods of refining, &c. Organic chemistry. Vegetable substances. Animal substances.

This course is accompanied by manipulations in the laboratory of the institution, in which the most useful preparations of the course are made by the pupils themselves. They are also taught the principles of analysis, both mineral and organic, practically.

ARCHITECTURE.

Component parts of edifices. General principles. Materials. Foundations. Strength. Forms and proportions of the parts of buildings. Floors. Roofs, arches, &c. General principles of the compositions of parts of edifices. Illustrations of the different varieties of parts, as porticoes, porches, vestibules, halls, &c. Composition of an edifice. Varieties of buildings—as colleges, hospitals, prisons, barracks, &c.

The pupils copy from the board the sketches of the professor, and draw them carefully when required. At the close of the lectures there are four different subjects assigned, upon each of which there is a competition. The pupils are classified according to the result of these competitions, and of the marks for their graphic exercises during the course. The best

designs are exhibited. Three India-ink drawings are made on architectural subjects during this course.

FRENCH COMPOSITION.

The course consists principally in the writing of essays and compositions by the pupils, which are subsequently criticised during the recitations.

GERMAN LANGUAGE.

Elements of the language. Grammar reading. Themes and versions. Every lecture is followed by an examination of an hour and a-half in duration, by the professor or repeater. There are, besides, exercises of pronunciation and common conversation.

TOPOGRAPHY.

Exercises in topographical drawing. Different modes of representing the ground by horizontal curves, the projections of lines of greatest declivity, and by shading. Conventional signs. Lettering. The exercises of the second division are preceded by lessons from the professor of geodesy, explanatory of the theory.

DRAWING OF THE HUMAN FIGURE AND LANDSCAPE DRAWING.

In the first branch the pupils are divided into two classes, one of which copies engravings, and the other draws from models. On entering the school the pupils are classified according to the drawings which they made at the examination for admission. They are then divided into two sections, of as nearly equal strength as possible, and assigned, each one, to a master, with whom they remain during their course. One of the drawing-masters is specially charged with the course of drawing from casts and from nature. At the beginning of the second year, the highest third of the pupils of each section of the former first division go to the teacher of drawing in water colors, and remain for two months. They return to their sections, and are replaced by the next division, each pupil occupying a third of the second year in this kind of drawing. The merits of the drawings are judged every two months. After the first of May the ordinary drawing lessons are replaced by those in water colors.

Besides these regular studies, there are from twelve to fifteen lectures on anatomy and physiology, given towards the close of the second year, during hours not devoted to the regular branches, and which it is optional with the pupils to attend or not. Fencing, music, and dancing lessons, are also given.

During the interrogations by the professors and repeaters, notes are taken of the merit of the answers of the pupils, according to a uniform scale of marks. These are communicated with the subjects of each lecture or recitation to the director of studies, and placed upon record, as assisting in determining the merit of the pupils. The examiners mark according to the same scale. The pupils are classified after the examinations in the several departments, and in taking the average for the standing in general merit, a different weight is allowed to the different courses. Mathematics counts most, and then the graphic exercises, descriptive geometry and geodesy united, and conduct count the same—then physics and chemistry.

The examinations at the end of the two years of study are divided into four; the first, on the courses of the first year, including analysis, part of analytical geometry, and mechanics; the second, on chemistry; the third, on physics; the fourth, on descriptive geometry and its applications, and part of analytical geometry. The examination at the close of the second year is divided as follows:—First, analysis, analytical geometry, mechanics, effects of machines and social arithmetic. Second, chemistry. Third, physics. Fourth, geodesy, description of machines, and architecture. The examination on analysis and its applications, and mechanics, are conducted by the two permanent examiners. The pupils are examined singly and without the presence of their comrades, and each examiner occupies a separate room. Where the branches admit of it, the examinations are *viva voce*, the student using the blackboard when required.

After the examinations are completed, the results are reported to a board, who, with all the materials before them from the examiners and from the school, decide whether the pupils may pass to the higher division, or are admissible into the public service, according to the division to which they belong. This board ("jury") consists of the two commandants, the director of studies, the two permanent and three temporary examiners.

The arrangement of the time allotted to study, like the similar points in regard to instruction, is a matter of very minute regulation. The pupils study in large rooms, conveniently fitted up for the purpose, and where they receive by lot, at entrance, places which they retain, in general, during the course. The interrogations or recitations take place in rooms adapted to that purpose, separate from the larger lecture halls. These recitation-rooms are also open to the pupils in winter, during recreation hours, and after supper; and in summer, whenever the weather is bad, so as to prevent them from spending the time in the open air, besides at certain stated periods before the examinations. The repeaters are present during

the periods devoted to the studies of their several departments, and, except in the cases of the graphic exercises where it is not allowed, are expected to give assistance to the pupils who ask for it.

The order of the day in the institution is arranged with a view to bring the lectures, recitations, and studies of particular branches together. Besides this, there are study-hours called free, in which the student may employ himself as he pleases, otherwise than in drawing of any kind (graphic exercises.)

The discipline of the school is thoroughly military, and the means of carrying it out in all its strictness are provided. The regulations are very minute, and fix, in detail, the punishment considered equivalent to each offense, as well for those against morals as transgressions of the regulations themselves. The punishments are—1. Private admonition by the commandant or vice-commandant. 2. Public reprimand before the corps of pupils. 3. Confinement to the walls of the institution, or stoppage of leave. 4. Confinement to the house. 5. Imprisonment within the walls. 6. Military imprisonment. 7. Dismission. The usual punishment for trivial offenses is the stoppage ("sortie,") one of which is equivalent to a deprivation of the general leave of absence for half a day. This may be awarded by an officer as low as an adjutant. It follows certain specified offenses, as over-staying a leave, when the number of stoppages is in proportion to the time of over-staying the leave, and is even assigned for a failure in recitation. Imprisonment within the walls can only be awarded by the commandant, vice-commandant, or director of studies, and excludes the student from the recitation-room. Confinement in the military prison requires the order of the commandant, who reports the case at once to the minister of war. Dismission can not take place without the sanction of the minister. Cases of discipline, suppose to involve dismission or the loss of a bursary, are referred to a board called the council of discipline, and composed of the two commandants, the director of studies, two professors, two captain inspectors, the captain instructor, and one administrator.

For military exercises, and the general furtherance of discipline, the pupils form a battalion, divided into four companies, each division of the school forming two companies. From each company eight petty officers, called sergeants, are taken according to the order of the merit-roll of the division, making thirty-two in the whole battalion. These sergeants are distinguished by appropriate military badges. The sergeants have charge of the other pupils in the study-rooms, halls, recitation-rooms, refectory, laboratories, and lecture-rooms, and two of them in turn are joined with a higher officer, an adjutant, in the inspection of the food. They have charge in general of the details of police. The second sergeants are intrusted with the collection of money due by their comrades for letters and other authorized expenses. These officers are appointed once a year.

The administration of the fiscal affairs of the school is committed to a board consisting of the commandant and vice-commandant, the director of studies, two professors, designated by the council of instruction, two inspectors of studies in turn, according to rank, the administrator or steward as reporter (rapporteur,) the treasurer as secretary. The last two named agents are consulting members only. This board meets twice every month. It prepares the estimates for the expenses of the school, which are submitted to the minister of war. The form of these and, indeed, of all the accounts, is laid down minutely in regulations.

The payment made by parents for the maintenance of the pupils does not go into the treasury of the institution, but into the general central treasury of the country. The school furnishes the pupil, for a stipulated sum, with his board, lodging, clothing, and petty expenses. For repairs of clothing and petty expenses, a special sum is set aside, of which the student receives an account. Parts of the supply of clothing, &c., at entrance, may be furnished by the parents, but the rest is supplied by the school at the parents' expense.

The steward (administrateur) is the executive officer of the domestic economy of the school—prepares all matters of business for the consideration of the council of administration, and the estimates of every kind, regular and contingent; presents the plans and estimates of the architect of the school for repairs or new buildings, and superintends their execution when authorized; makes contracts and receives the articles contracted for; has charge of the issue of all articles, of the store-houses, and of the servants; superintends the infirmary; he nominates the subordinate persons employed in his department, and is responsible directly to the council, in virtue of the authority of which he is supposed to act.

The board of examination decide formally upon the claims of the pupils of the second year to be graduated, and arrange the rolls in the order of merit. The pupils then, in turn, choose the department of the public service which they wish to enter, and in case there is no vacancy in this department, are still entitled to priority of choice in other branches over those below them.

On entering these several services, the graduates pass to the schools of application, or special schools, intended to give the technical preparation necessary; a notice of those which prepare for civil pursuits is here given.

There are special schools of practice for the land artillery and engineers, and for the staff or topographical engineers. The officers who have charge of the manufacture of powder are sent to the different government establishments for practice. The graduates intended for the naval artillery go to the school of practice for the land artillery at Metz; those for the naval engineers, to a special school at L'Orient. The hydrographical engineers enter at once upon the actual discharge of their duties in subordinate situations. The courses in these schools, or the apprenticeship to the duties of the service, vary from two to three years, according to the branch. The civil services have the schools of practice for the corps of roads and bridges, and of mines, and for the manufacture of tobacco.

The corps of civil engineers, entitled corps of roads and bridges (*corps de ponts et chaussées*), have in charge all the works of this class, for the construction and repair of which the government is responsible. Their special school at Paris was founded as early as 1747, and embraced some of the acquisitions now made at the polytechnic school. Its organization, however, appears to have been exceedingly imperfect, the pupils being admitted without examination, and receiving part of their instruction out of the school. At present, the regular pupils are admitted from the polytechnic school, and go through a course of three years. The branches taught consist of applied mechanics, civil architecture, constructions, mineralogy, geology, administrative jurisprudence, drawing, and the English, German, and Italian languages. There are examinations at the close of each year. The lectures occupy the period from the 20th of November to the 1st of May. During the intervening time, from May to November, the students of the second and third years are sent into the field for practice, under the departmental engineers. The pupils receive pay, as aspirants from the government while at the school, and may rise to the rank of engineer of the second class in three years from the period of leaving it.

The corps of mines is charged with the execution of all laws relating to mines, miners, quarries, and furnaces, and with the promotion, by advice or personal exertion, of the branches of the arts connected with mining. They superintend the working of mines, and are responsible for the safety of the workmen, the due preservation of the soil, and the economy of the work. They also have the special superintendence of the execution of the laws relating to the safety of the steam-engine. They have two schools of practice, one at Paris, called the school of mines, the other at St. Etienne, called the school of miners. The duties of instruction in both these schools are confided to members of the corps. That at Paris is considered to rank among the first of the special schools of France.

The regular pupils of the school of mines are divided into two classes, according to the pay received from the government. The pupils from the polytechnic school enter the second of these classes. They remain at the school not less than two nor more than four years. During the winter there are courses of mineralogy, geology, the working, refining, and assaying of metals, the working of mines, drawing, and the English and German languages; and at the close, the pupils are examined.

The students of the first year are employed during the summer in chemical manipulation in the laboratories of the school, which are admirably provided for this purpose, in making geological excursions in the neighborhood of Paris, and in the use of surveying instruments. During the similar periods of the following years, the students are sent into the departments, and sometimes abroad, to make particular examinations in relation to their profession, and on their return are expected to present a memoir descriptive of their investigations.

The students of the first, or highest class, are present at the sittings of the general council of mines, to familiarize them with the business of the corps. After their final examination they are classed in the order of merit, and receive their first promotion accordingly.

Since the date of Prof. Bache's Report, the administration, the entrance examination, and course of instruction in the Polytechnic school has undergone some changes, and yet the main purpose, features, and methods of the institution, remain the same, winning from the Commission appointed by the War Department of the British Government in 1856, "to consider the best mode of reorganizing the system of training officers for the Scientific Corps" of the Army, the following testimony.

Regarded simply as a great mathematical and scientific school, its results in producing eminent men of science have been extraordinary. It has been the great (and a truly great) Mathematical University of France.

Regarded again as a preparatory school for the public works, it has given a very high scientific education to civil engineers, whose scientific education in other countries (and amongst ourselves) is believed to be much slighter and more accidental.

Regarded as a school for the scientific corps of the Army, its peculiar mode of uniting in one course of competition candidates for civil and military services, has probably raised scientific thought to a higher point in the French than in any other army.

Regarded as a system of teaching, the method it pursues in developing the talents of its pupils appears to us the best we have ever studied.

It is in its studies and some of its main principles that the example of the polytechnic school may be of most value. In forming or improving any military school, we can not shut our eyes to the successful working at the polytechnic of the principle, which it was the first of all schools to initiate, the making great public prizes the reward and stimulus of the pupil's exertions. We may observe how the state has here encouraged talent by bestowing so largely assistance upon all successful, but poor pupils, during their school career.

The commission in the course of their report, mention a few "marked defects." "Such is the attempt to give exactly the same teaching, lesson by lesson, during a course of two years, to a class of one hundred and sixty pupils, with no reference to their varieties of ability, or power of application. This practice has a tendency either to make many of the pupils superficial, or to exhaust them." "Another defect is the exclusively mathematical spirit encouraged and its tendency to prevent the education (of officers both civil and military) from being truly liberal." "Nor can we avoid remarking that education has its moral as well as its merely intellectual side, and we were not merely as much impressed with the moral and manly, as by the intellectual effects of the Polytechnic teaching." "In spite of these drawbacks, many points in its system of teaching is admirable; and it does for the Army, and the services of the Public Works of France, what the Universities do chiefly for the Bar and Clerical Profession in England."

We append a note by Prof. Gillespie, to his communication in a former volume of this Journal, giving the present course of study in this school.

NOTE.

We add a very condensed synopsis of the subjects embraced in the "*Interior Instruction*" of the Polytechnic School in 1856. The reasonings which led the Commission to select these special subjects, and to proportion them as here shown, may be given hereafter. The numbers in parentheses, which follow the topics, indicate how many lectures are given to them. Each lecture embraces one and a half hours, of which the first half-hour, *at least*, is to be given to interrogations. The entire course comprises two years.

INTERIOR INSTRUCTION IN THE POLYTECHNIC SCHOOL.

1. COURSE OF ANALYSIS.

Differential Calculus.

General principles, (8.) Analytical applications, (6.) Geometrical applications,* (12.)

*Calculus of differences, (2.)**Integral calculus.*

General principles, (6.) Geometrical applications, (5.) Applications to mechanics, (3.) Certain definite integrals, (2.) Integration of differential equations of the first and second order, (5.) Linear equations, (3.) Integration of equations by series, (1.) Integration of simultaneous differential equations, (2.) Equations of partial differentials, (2.) Geometrical applications, (2.) Mechanical and physical applications, (11.)

Elements of the Calculus of Probabilities and Social Arithmetic, (3.)

[The whole course of analysis (including reviews) comprises seventy-eight lectures, of which forty-five are given in the first half of the first year, and thirty-three in the first half of the second year.]

2. DESCRIPTIVE GEOMETRY.

First Part.—Theoretical course.

This comprises thirty-four lectures, with constant graphical practice.

Second Part.—Applications.

Perspective and shadows, (7.) Stone cutting, (15.) Cutting and combining timber, (9.)

[This course extends through the first year.]

3. MECHANICS AND MACHINES.

Mechanics of geometrical motions; or Cinematics.

Preliminaries, (3.) Geometrical transformations of motion, (8.) Composition of motions, (5.) Of acceleration in geometrical motions, (3.) Of acceleration in some natural motions, (3.)

Mechanics of forces; or dynamometrics.

Fundamental principles of the molecular mechanics of systems of material points, (3.) Applications of these principles, (6.) Equilibrium and stability of solid bodies, (9.)

Mechanics of the motions impressed by forces; or dynamics of systems.

Preliminaries relating to free material points, (3.) General principles relating to systems of material points, (6.) Dynamics of solids or invariable systems, (4.) Applications of the general principles of dynamics, (5.) Theory and calculation of machines, (2.)

* The method of infinitely small quantities is required to be exclusively employed in the applications of the calculus.

Hydraulics, Pneumatics, and Motors.

Hydrostatics, (1.) Experimental hydraulics, (4.) Hydraulic machines, (4.) Steam-engines, (3.)

[This course comprises seventy-six lectures, including those of review. It extends through two years.]

4. PHYSICS.

Preliminaries, (5.) Heat, (18.) Statical Electricity, (3.) Magnetism, (4.) Dynamical Electricity, (10.) Acoustics, (4.) Light, (18.)

[This course comprises sixty-eight lectures, and extend through two years. It is entirely experimental.]

5. CHEMISTRY.

Preliminaries, (2.) Metalloids, (19.) Metals, (35.) Powder, lime, glass, and pottery, (6.) Organic chemistry, (5.) Organic chemistry manufactures, (5.)

[This course is distributed over two years, with many practical manipulations.]

6. COURSE OF GEODESY.

Trigonometry, [reviewed,] (2.) Measure of time, (2.) Measure of angles, (5.) Astronomy, (17.) Geodesy proper, (5.) Geographical maps, (2.)

[This course is given in the second half of the second year.]

7. ARCHITECTURE AND PUBLIC WORKS

First part: Elements of edifices, (18.)

Second part: Composition of edifices, (16.)

Third part: Ways of communication. Roads, bridges, canals, improved rivers, railroads, (6.)

8. MILITARY ART AND FORTIFICATIONS.

First part: General notions, (7.)

Second part: Temporary fortification, (4.)

Third part: Permanent fortification, (7.)

Fourth part: Attack and defense of places, (2.)

9. COURSE OF TOPOGRAPHY.

[Ten lectures, during second year.]

10. COURSE OF COMPOSITION AND FRENCH LITERATURE.

[This course extends through the last year and a half.]

11. THE GERMAN LANGUAGE.

[Sixty lectures, during the two years.]

12. FIGURE AND LANDSCAPE DRAWING.

N. B. It should be remembered, to account for the brevity of some important parts of the course, that the Polytechnic School is itself only preparatory to a number of "*Special*" schools, such as those of Civil Engineering, of Military Engineering, of Mining, &c.

It ought also to be mentioned that many of the modifications here introduced into this course have been warmly opposed and censured by various French mathematicians and practitioners.

W. M. G.

POLYTECHNIC INSTITUTE

OF

VIENNA.

THE whole institution is intended to fulfill a threefold purpose, as a school for the mechanic arts, manufactures, and commerce, as a conservatory of arts and manufactures, and as an institute for the promotion of national industry. The last named object is effected by public exhibitions, from time to time, of the products of manufactures, under the direction of the institute. For the better execution of this object, a spacious building is now erecting on the premises, adapted to the occasional display and permanent deposit of specimens of the mechanic arts. The collections which form the conservatories of arts are also used for instruction in the school, and will be described in connection with it.

The whole institution is under the control of a director, who is responsible to the higher authorities of public instruction, and of trade and manufactures. The director is the general superintendent of the business of the institute and of the instruction, but does not teach. He regulates the admission of pupils and the discipline. The money concerns are under the charge of a treasurer, who is responsible to the director. The inferior officers are responsible to the same authority. The discipline of the scholastic department is simple but rigid, no pupil being allowed to remain connected with it whose deportment is not proper. The courses are gratuitous, except a small entrance fee, and this is considered as warranting prompt removal when the pupil does not perform the duties prescribed by the institution.

The department of instruction is composed of three schools, a technical, a commercial, and a "real school." The last named is a preparatory school for the two others, and may be entered as early as thirteen years of age. Its courses are of religious instruction, of German language, elementary mathematics, geography, history, natural history, elocution, calligraphy, and drawing, and are obligatory upon the pupils. Italian and French may be studied if the pupil desires it. As these courses lead in three years to the other departments of the institution, the candidates for admission are required to possess the elementary attainments necessary to their successful prosecution. There are five professors and four teachers connected with this school, which is superintended by the vice-director of the institute. The instructors rank by regulation with those in the gymnasias or classical schools of the empire. The course of instruction is not as comprehensive as that in the Prussian real schools, but is an adequate preparation for the next higher divisions, which supply in part these deficiencies.

The technical and commercial schools furnish special instruction according to the intended pursuits of the pupil, though he may, in fact, select the courses which he wishes to attend, not being limited as to the number or character of the branches. The director advises with the pupil, on admission, as to the studies most appropriate to be followed, if his intended calling is fixed, and he is not allowed to join the classes, the courses of which require preparation, without presenting a certificate from the school at which he has been instructed, or being examined, to ascertain his proficiency. In regard to other courses, there is no such restriction. The age for admission is sixteen years.

The instruction is given in the technical school by eight professors and two assistants; the professors lecturing, and in some of the courses, interrogating the pupils. Certain lectures are also gone over by the assistants with the classes. The courses which combine practice with teaching will be pointed out in enumerating the subjects of study. The division of these subjects, and the time devoted to them during the week, are as follows:

- I. GENERAL CHEMISTRY, applied to the arts, five hours.
- II. SPECIAL TECHNICAL CHEMISTRY, ten hours. This course gives a particular account of all the processes of the arts of which the principles were developed in the general lectures.

There is a special laboratory devoted to the course, where, under the superintendence of the professor or of his assistants, the pupils go through the processes on a small scale. Those who have a particular object in view, as dyeing, bleaching, printing upon stuffs, or the manufacture of chemical preparations or metallurgy, are directed in their investigations especially to the parts of chemistry which they will have to apply. Practice and theory are thus combined.

III. PHYSICS, with special reference to its applications, five hours.

IV. ELEMENTARY MATHEMATICS, including arithmetic, algebra, geometry, and mensuration, ten hours. This course is intended for those who have not passed through the real school.

V. HIGHER MATHEMATICS, five hours. There is a repetition by an assistant, also of five hours.

VI. MECHANICS, including the description and calculation of machines, five hours. This subject is founded upon a course of machines, considered as an application of descriptive geometry and drawing, superintended by an assistant.

VII. PRACTICAL GEOMETRY, including land and topographical surveying, levelling, &c., five hours. The lectures are accompanied by practice in the use of instruments in the field.

VIII. CIVIL AND HYDRAULIC ARCHITECTURE, ten hours. This includes a complete course of engineering, in its various branches. It is accompanied by exercises in drawing.

IX. TECHNOLOGY, or a general discussion of arts and trades, five hours. The subjects which come under the head of special chemistry are omitted in the lectures of this division.

X. The assistant professor of chemistry delivers an extra lecture, daily, on the methods of measuring SPECIFIC GRAVITIES, during part of the course.

XI. Elementary DRAWING for those who have not passed through the real school, five hours. There are extra courses in the Latin, Bohemian, and English languages, for those who wish to follow them.

The time devoted to drawing depends upon the student, but it is obvious that his knowledge must be very incomplete, and that he will carry away from the school but an imperfect record of descriptive geometry and its applications, unless he devotes a great deal of time to this branch. In this respect the arrangement of the school is entirely different from that at Berlin, where the drawings accompanying the courses are made as much a matter of regular duty as the attendance upon the lectures themselves. This is certainly the proper plan, and while it appeared to me that the time spent in the graphic exercises at Berlin was even beyond the measure of their importance, I am decidedly of opinion that a strict attention to this department is essential.

The collections, by the aid of which these courses are carried out, are—1. An extensive collection of chemical preparations for both special and general chemistry. The pupils in special chemistry, as already stated, make preparations in the departments of the art which they intend to follow, and some of these are left behind them as specimens of their skill. In the department of the dyer there is quite a large series of specimens collected in this way. The laboratories for both special and general chemistry are admirably adapted to their purpose.* 2. A cabinet of instruments for the course of practical geometry. 3. A considerable collection of physical apparatus. 4. A collection of models of machines, and in engineering. 5. A technological cabinet of a most complete character, and admirably arranged; it contains many of the best specimens of Austrian arts and manufactures. All these collections are under the care of the professor in whose department they find a place; there being, besides, curators for the immediate charge of them, and for keeping them in repair. The cabinet of physical apparatus, and of models and machinery, were in the main supplied from the workshops of the institution. These shops have long been celebrated for the astronomical and geodesic instruments furnished from them. They are still kept up, though on a reduced scale, their chief object having been accomplished. They were never intended, like those of Berlin, to afford practical instruction to the pupils. The institution, indeed, does not recognize the principle that this can be done to advantage in the mechanical department. It is certain, as already stated, that great care is required to render such establishments of any avail beyond the point of giving to the pupil a general readiness with his hands, and that even when well conducted they are expensive. Success in practical chemistry requires essentially a very considerable knowledge of theory; the processes on a small scale represent, in general, fairly those upon the large, and experiments thus made frequently save the outlay which is required to make them in the large way. The

* The laboratory of the professor of general chemistry, Professor Meissner, is one of the best arranged which I saw abroad. The furnace operations, and others likely to inconvenience the class, are performed behind a screen, with large glass windows, which allow a perfect view: the space behind is provided with the means of carrying off the fumes.

practice in the laboratory of a school is, besides, very nearly of the kind required for the manufactory. These, among other circumstances render the problem in regard to successful preparation for the arts depending upon chemistry, different from that relating to the art of the machinist. It is in this department that the polytechnic school of Vienna is particularly strong. There can be no doubt that Austrian manufactures in general have received a great impulse through the medium of this institution, and particularly of its scholastic department, but while praise is yielded to the different courses, the arrangements for teaching chemistry must be considered as having a preference over the others.

The lessons in the commercial school embrace the following subjects :—

- I. Commercial correspondence, three hours per week.
- II. The science of trade (*Handelswissenschaft*.) three hours.
- III. Austrian laws relating to trade and exchange, three hours.
- IV. Commercial arithmetic, six hours.
- V. Book-keeping, by single and double entry, four hours.
- VI. Account of the materials of trade. (*Waarenkunde*.) the sources, uses, properties, kinds, adulterations to which they are subject, &c., four hours.
- VII. Commercial geography, three hours.
- VIII. History of commerce, three hours. There are five professors in this school.

Once a week the professors of the institute meet, under the presidency of the director, to confer on the business of the institution. Saturday is appropriated in part to this purpose, and there are no exercises for the students on that day. One of the professors is secretary of the board. The professors rank by regulation with those of the universities.

The lectures last from October to August of every year. At the close of them, a pupil who wishes a certificate in any branch, presents himself, and is examined by a professor, in presence of a director and of two members of the imperial commission of studies. A student who has attended the lectures, and does not wish to be examined, may receive a certificate of attendance.

To supply the place of a regular division of studies for different callings, one of the earlier programmes contained a recommendation of certain courses of study as preparatory to particular occupations. The recommendations were the following :—For tradesmen, the two years of the real school, and one year of the commercial school; or for a more complete education, an additional year, embracing the courses of chemistry, physics, and technology of the technical school. For dyers, printers in stuffs, bleachers, manufacturers of chemical products, of salt, of saltpeter, for miners, metallurgists, brewers, &c., special chemistry, physics, and technology, with some of the courses of the commercial school. For machinists, hydraulic engineers, mill-wrights, foremen in manufactories, and mining engineers—a course of two years was recommended, the first to embrace mathematics, physics, and drawing, and the second, mechanics, machine-drawing, and technology. As a preparation for agriculturists and foresters—courses of mathematics, physics, practical geometry, chemistry and book-keeping. For miners, mathematics, physics, practical geometry, mechanics, drawing, and book-keeping. For surveyors, mathematics, physics, practical geometry, drawing, and book-keeping.

There is still a regular course laid down for architects and civil engineers, the satisfactory completion of which entitles to a diploma. The first year includes elementary mathematics, technology, and drawing; the second, higher mathematics, physics, and drawing; the third, the applied mathematics, mechanics, practical geometry, and drawing; the fourth, architecture, engineering, drawing, technology, chemistry, and book-keeping.

The library of the institute is appropriated to the several departments, and is used by the students, as well as by the professors. Yearly appropriations, besides the entrance and diploma fees, are devoted to its increase. The professors have the right of recommending such works to be purchased as they may deem of use in their departments. An annual is published by the institute, consisting of original and selected scientific articles, by the professors, and notices of the institution.

XVII. TEACHERS' INSTITUTE:

[THE following extracts from "Report to the Board of Regents of Normal Schools in the State of Wisconsin," exhibits the nature and efficiency of the *Teachers' Institute*, as an educational agency, when worked in connection with other departments of a system of public instruction, among earnest teachers and a willing people.]

To the Board of Regents of Normal Schools:

In giving an account of my proceedings as your Agent for 1859, it is hardly necessary to say, that I have attempted to do a large amount of work, much of it novel, all of it important, touching many interests, institutions and individuals, spread over a large amount of territory, and in a period of time, not long, even if the whole of it could have been devoted to the work, but largely abridged by a period of severe illness. What I have attempted to do has been done without that system and thoroughness which I hope soon to introduce into the operations of this agency.

My duties as specified by section 10, chapter xciv., of the General Laws, passed in 1859, and by your instructions are "to visit and exercise a supervisory control over the Normal Departments of all such institutions as shall apply for a participation in the Normal School Fund;" to "conduct County Teachers' Institutes, and give Normal instruction in the same;" and "to coöperate with the Superintendent of Public Instruction in providing a system of public educational addresses, to be delivered in the various counties of the State."

In touching briefly on each department of my labors, I will select,

I. TEACHERS' INSTITUTES AND EDUCATIONAL ADDRESSES.

By this designation, a Teachers' Institute, is now understood, a gathering of teachers, old and young, experienced and inexperienced, of both sexes, and of schools of different grades;—in such number as will develop the sympathies and power of a common pursuit, and yet not so large as to exclude the freedom of individual action;—for a period of time, long enough to admit of a systematic plan of operations, and yet not so protracted as to prove a burdensome expense, or an interruption to other engagements;—under the direction of men, whose only claim to respect and continued attention must be their experience and acknowledged success in the subjects assigned them—and in a course of instruction, at once theoretical and practical, combined with opportunities of inquiry, discussion and familiar conversation.

The Teachers' Institute, so appointed, organized and conducted as to exclude professional jealousy, and at the same time enlist the coöperation and attendance of school officers and parents, and by the almost universal practice of welcoming teachers to the hospitalities of the families of the place where the Institute is held, and assigning to the evening lectures and discussions all topics of general interest, has proved an educational revival-agency of the most extensive, permanent and unobjectionable character. During nearly a quarter of a century's study and observation of schools, school systems and educational agencies, in different States and countries, I have tried, seen or read of nothing so universally applicable or so efficient in awakening and directing rightly both professional and parental interest in the broad field of popular education, as a well attended and wisely conducted Teachers' Institute. A single educational lecture or address, or a convention in which a number of addresses are delivered, may occasionally move a sluggish community into sudden and vigorous action, but generally it is only after years of effort, by a few individuals, against all sorts of obstacles, that a good school-house is built, a proper classification of studies secured, and well qualified teachers employed and adequately paid, in schools of different grades. But I can not recall a town where I ever held a well-conducted Institute, where the teachers were distributed through all the principal families, and the evenings were devoted to public addresses and discussions on topics connected with the organization and administration of the school system, and the classification, instruction and discipline of public schools, where the work of educational improvement did not at once begin—and begin too where all improvement in the education of children must begin, in the heads and hearts of parents, in the enthusiasm, enlarged knowledge and practical skill of teachers, and in the well considered and liberal action of school officers and the public generally.

Permanent Associations of teachers, for mutual improvement and advancement of their profession, have accomplished much good, and may be made still more widely beneficial, and should receive the aid and countenance, not only of teachers, but of the Legislature and the people. But a well arranged and judiciously conducted series of Institutes, will, in a single year, without wasting time in forming and amending constitutions, or election of officers, and discussing questions of order, or places of meeting, and avoiding all occasions of jealousy or charges of exclusiveness, reach a larger number of teachers, secure a more thorough and systematic presentation and discussion of the principles and methods of teaching and discipline, exposing and exploding those which are obsolete and defective, and explaining and commending those which are new and valuable, awaken more professional spirit, and form and strengthen more bonds of connection between the older and younger teachers, than all the state, county, and town associations, acting together, with meetings extending over only one or two days, can do in many years.

A well equipped Normal School, or institution for the special training of teachers, modified to suit the peculiar circumstances of the state, and

and the present condition of the schools, is unquestionably the most direct and efficient instrumentality for thoroughly educating and training young men and young women for the work of teaching; and if in its practical operations, the staff of professors could be so numerous, and of the peculiar qualifications required, as to conduct the county institutes, examine, in connection with a county school officer, all candidates for teaching, and with your board, all normal classes in institutions participating in the funds which you administer—such a normal school, organized in connection with other parts of the school system, and other agencies for the professional improvement of teachers, would be an unmixed blessing to the state, and improve at once, and largely, both the quality and quantity of instruction given in the public schools. But in the present state of popular feeling, and of wide-spread financial embarrassment, such a normal school can not be looked for; and even if it could be established at once, the Teachers' Institute, under your general direction, and the educational lecture, in connection with the operations of the Superintendent of Public Instruction, can do more to create a demand for, and appreciation of the services of well qualified teachers, and at the same time, in connection with the state university, the colleges, academies and high schools, contribute more largely to the better qualification of such teachers as the districts will employ for the present to teach their schools, than even such an institution, unless under the favorable conditions above supposed. The men employed to conduct institutes and examine normal classes, must be men of normal training and capable of giving normal instruction; and if such men can be employed, they will constitute, if not a normal school, an itinerating normal agency, which will, every year, be felt directly in every county, and indirectly through the teachers, on a majority of the public schools and children of the state.

With these general views of the importance of the Teachers' Institute, in the form it has now assumed in this country, and in its power to reach, interest and instruct both teachers and parents, and in accordance with numerous applications, I decided to organize, as your agent, a series of Institutes, which should reach in one season, every section of the state. I availed myself of the meeting of the State Teachers' Association, at Madison in July, to spread before its members an outline of my plan of operations, and had the pleasure to receive from many prominent and active teachers, as well as from the Association itself, an expression of their kind feelings toward me personally, and a pledge of their hearty coöperation in my labors in your behalf.* I was thus enabled to make more extensive

* "Resolved, That as an association and individuals we rejoice in the progress of popular education in Wisconsin, and welcome the promise now dawning upon us of attaining a systematic, comprehensive scheme of public instruction in the state—a scheme rising in legitimate gradation, and bound in one symmetrical whole, from the primary school to the University.

Resolved, That we hail the advent of Hon. Henry Barnard among us, and pledge him our hearty coöperation in his labors in behalf of our Common Schools.

Resolved, That we recognize in the "*American Journal of Education*," conducted by Dr. Barnard, a work honorable to our country, and deserving of our support."—*Proceedings of State Teachers' Association in 1859.*

and immediate arrangements for the series, than I could otherwise have done. I accordingly issued a circular, proposing to appoint as many Institutes as I could arrange to attend and provide instruction for, upon receiving reasonable assurances, that at least thirty teachers would be present for five days, and that the citizens of the place, where the Institute was held, would entertain, free of charge, all teachers who should attend.

In compliance with these conditions, an Institute was held as follows: at Elkhorn, with 175 members; Sheboygan, with 65; Waupun, with 120; Appleton, with 75; Mineral Point, with 67; Richland, with 60; Galesville, with 40; River Falls, with 70; Eau Claire, with 81; Baraboo, with 125; Milton, with 225; Kenosha with 100; Beloit, with 150, and Madison, with 120; or 14 sessions with 1,488 members. In addition to these a session of two days or longer was held at La Crosse, with 35 members; at Oshkosh, with 24; at Palmyra, with 20; Milwaukee, with 100, and Waukesha, with 100; making an aggregate of over 1,700 members, most of whom are now engaged in teaching, reached directly by the instructions and lectures of the Teachers' Institute in 1859.

In the regular session of four days and five evenings, there were usually from twenty-five to thirty class exercises, and five evening lectures. Although no attempt was made to pursue the same programme at each Institute, it was my general direction to those who assisted in conducting them, to give some attention, during each day, to the elementary sounds, to the spelling, reading and writing correctly, the English language, to arithmetic (mental as well as written) and geography—with special reference to the most successful modes of teaching these branches, and of classifying and managing a school. No attempt was made to treat any one subject comprehensively, and thoroughly, but to suggest hints, illustrate methods, solve difficulties, and correct erroneous notions. In some of the sessions, prominence was given to elocutionary training, and in all the efficacy of vocal music as a recreating and devotional agency was exemplified. In a few, the facility with which drawing might be taught as introductory to penmanship, and its importance in the culture of the hand and eye, as well as of the taste, and its many uses in all the industrial pursuits of society, were pointed out. In all, the importance and method of moral training were presented and the order, classification, and discipline of schools discussed.

The evenings were devoted, exclusively, to lectures and discussions, in every instance, on topics of an educational character, and the attendance of parents, night after night, filling the largest hall or church in the place, and invariably, the most crowded on the last evening, was a gratifying evidence of the interest which the meetings awakened.

In all of the places where the Institutes were held, the members from abroad were hospitably entertained by the citizens, and thus, in more than one thousand families, the subject of schools and education, of the teaching and discipline of children, formed the topics of more thorough and intelligent discussion and conversation at the table and the fireside, than could have been secured in any other way. We cannot estimate

too highly the influence of hospitality thus cheerfully extended, in disseminating educational light and warmth, and in bringing the home and the school, the teacher and the parent, into pleasant and profitable relations.

A summary of the proceedings of each Institute was generally reported by the local papers, and in this way, also, the substance of the class exercises, and the topics and leading thoughts of the evening lectures, were more widely disseminated through the several counties than could have been done by any more formal publication.

As a memorial of these pleasant gatherings, arrangements were made at each Institute for publishing an outline of the proceedings, with a list of all the members so far as they filled up the blanks which were distributed for the purpose of getting the names, residence, previous opportunities of professional instruction, experience in teaching, and other statistics, in a pamphlet, to which I promised to append one or more papers of permanent interest and value to the teachers of Wisconsin. A copy of this document, I will present to each member of the Board.

Whatever of interest, in the great subject of human culture, this series of Institutes has awakened, is mainly due, beyond the prompt and thorough action of the local committees and teachers, to my personal friends, who were kind enough to labor in the class exercises day after day, and to take part in the evening lectures and discussions, at great inconvenience to themselves, and without an adequate compensation. To Messrs. John Ogden, of Ohio; F. A. Allen and Chas. H. Allen, of Pennsylvania; C. E. Hovey, of Illinois; Francis T. Russell and William S. Baker, of Connecticut; and A. J. Craig and Prof. J. D. Butler, of Madison, I would in particular make this public acknowledgement. To many teachers of public schools, principals and professors of academies and colleges, I am indebted for valuable aid. They all must find their reward in the satisfaction of having made known many excellent methods of school teaching, management and discipline, and of having quickened many minds, warmed many hearts, and strengthened the good resolutions of many parents, teachers and scholars in this work.

Before leaving this subject I will add, that in another year's operations as your agent, I hope to hold an Institute in every county in which there are thirty or forty teachers willing to come together for one, two, three or four weeks, and in connection with these meetings, and the plans of the Superintendent of Public Instruction, to secure an educational address in at least two hundred localities. In systematizing the details of the Institute, from year to year, I shall aim to give variety and special interest to the different sessions, by giving prominence to particular branches, and to the wants of each grade of school. I propose, (1.) to meet the wishes of those teachers who are willing to spend two, three or four weeks at an Institute, as well as to assist in the discussions and lectures of Associations which meet for only one or two days; and, (2.) to give special character to the exercises of a certain number of Institutes, by adapting one at least to the wants of each

class of Institutions, viz: 1. The ungraded District Schools. 2. Primary Schools, and home instruction of little children. 3. Intermediate and Grammar Schools, and the largest District Schools. 4. High Schools and Academies. 5. Normal Schools and Classes. 6. Colleges and all higher institutions which have substantially a common curriculum.

While I deem it of the greatest importance to make the Institute the common gathering place of teachers of every name, for the consideration of those elementary principles and methods which constitute the basis of all professional success, and for the discussion of topics which concern their common advancement, as well as the awakening of parental and public interest in schools and education, I deem it of no less importance to hold out inducements for the most accomplished teachers, in their respective fields of labor, to bring into the common stock the result of their special and individual experience and help to carry forward and upward on some common plan, every institution of every grade of instruction.

II. VISITATION AND EXAMINATION OF NORMAL CLASSES.

I shall reserve for another communication an account of the visits which I have been able to make, and of the personal interviews I have had with the principals and normal professors of the institutions which apply for participation in the normal fund, as well as the tabular statement of the examinations by written questions and answers, carried out under my instructions, of eighteen of those normal classes.

Respectfully,

HENRY BARNARD,

Agent of the Board of Normal Regents.

PERSPECTIVE OF GRADED SCHOOL HOUSE, SINGOL, U. C.



PLANS OF SCHOOL-HOUSE IN SIMCOE, UPPER CANADA.

The building, designed by Messer and Jones, architects, Toronto, is built of brick, at a cost of £1,700, on a lot two acres in extent, and will accommodate 600 pupils—one-half girls and the other boys—each sex having separate yards, entrances, and school-rooms.

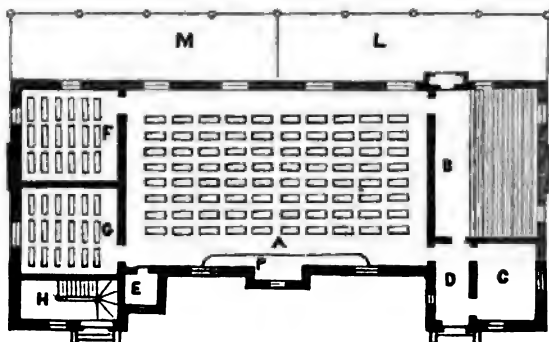


Fig. 1.—GROUND PLAN.

- | | |
|------------------|------------------------------|
| A Girls' School. | E Book or Library-room. |
| B Gallery-room. | F G Class-rooms. |
| C Cloak-room. | H Staircase to Boys' School. |
| D Entrance Hall. | L M Covered Play-shed. |
| | P Platform. |

Each floor, as is shown in Fig. 2, has a large school-room, to seat 150 pupils, with two class-rooms, (F. G.,) for 48 pupils each, and a gallery-room for 112 of the youngest pupils. All the rooms are ventilated by flues carried up to the roof.

The same exterior place will admit of an internal arrangement like that represented in Fig. 3—which will accommodate the same number of pupils, although the greatest number of pupils in any one room is 96.

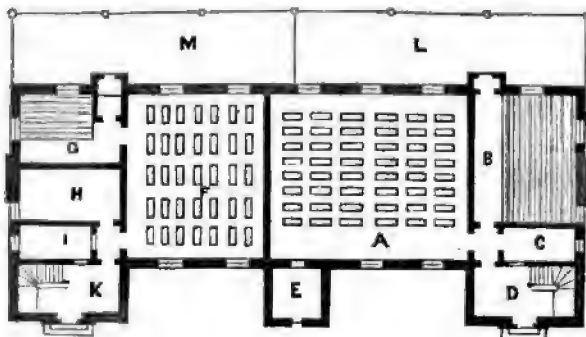


Fig. 2.—GROUND PLAN.

- | | |
|--------------------------------|--------------------------|
| A Girls' School. | F Boys' School. |
| B Gallery, or Infants' School. | G Gallery-room. |
| C Cloak-room. | H Class-room. |
| D Staircase. | I Cloak-room. |
| E Book or Library-room. | K Staircase. |
| | M L Covered Play-ground. |

We procured these cuts of the Simcoe School-house from Mr. I. George Hodgins, deputy superintendent of education of Upper Canada, who has published a treatise on "*The School-house*," with a large number of plans.

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